

PROGRESS REPORT

PHASE I:

**USE, ACCESS, AND FIRE/FUELS MANAGEMENT ATTITUDES AND PREFERENCES OF
USER GROUPS CONCERNING THE VALLES CALDERA NATIONAL PRESERVE (VCNP) AND
ADJACENT AREAS**

FOREST SERVICE JOINT VENTURE AGREEMENT NUMBER: 07-JV-11221602

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EXECUTIVE SUMMARY

This document represents a progress report of activities completed during Phase I of the study, *Use, Access, and Fire/Fuels Management Attitudes and Preferences of User Groups Concerning the Valles Caldera National Preserve (VCNP) and Adjacent Areas*, and the preliminary findings of this work. This initiative has been completed under the terms of Forest Service Research Joint Venture Agreement (RJVA) Number 07-JV-11221602 between the USDA Forest Service, Rocky Mountain Research Station, Research Work Unit GSD-4255, Fort Collins, CO, and Dr. Kurt F. Anschuetz, Consulting Anthropologist/Archeologist, Albuquerque, NM. Dr. Carol B. Raish, Research Social Scientist, USDA Forest Service, Rocky Mountain Research Station, Albuquerque, is both a research collaborator and the Forest Service Technical Representative.

The geographic focus of this inquiry is the Preserve and the surrounding portions of the Jemez Mountains. The purpose of this undertaking is to provide land managers, including the Forest Service and the Valles Caldera National Preserve, researchers, and members of the public with information concerning the use, access, and fire and fuels management attitudes and preferences of groups using the VCNP area and vicinity.

Phase I consists of two parts. The first was background research on forest and wildfire ecology, public perceptions of wildfire, and fire and fuels management on lands making up the VCNP and the adjoining areas of the Jemez Mountains. The second part was the identification of potential interview candidates and subsequent completion of the Expert interviews with the selected candidates. Nineteen qualified candidates were selected and successfully recruited to participate in formal interviews.

This progress report consists of three sections. The first part reviews the methods and procedures followed in designing and implementing the Phase I study. Topics include: (1) the development of the *General Expert Interview Instrument* that guides this study; (2) the process followed in identifying and recruiting the 19 participants for the formal Phase I Expert interviews, (3) the methods used to document the Expert interviews, (4) the rights and privileges of the participants to review their comments for appropriateness, accuracy and completeness; and (5) the use of spreadsheet and relational database software for managing and organizing interview information. The second part provides synoptic summaries of the 20 Expert interviews included in this study. This narrative introduces the participants and offers selected highpoints from each Phase I interview. The final section of this report discusses how the body of summarized and selectively transcribed quotes is now being used to develop a comprehensive outline for the final project report, which will be a synthesis of all three of the study's scheduled three phases, of which Phases II and III are ongoing.

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**DRAFT FINAL
PROGRESS REPORT**

**PHASE I:
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Introduction

This document represents a progress report of activities completed during Phase I of the study titled, *Use, Access, and Fire/Fuels Management Attitudes and Preferences of User Groups Concerning the Valles Caldera National Preserve (VCNP) and Adjacent Areas*, and the preliminary findings of this work. This initiative has been completed under the terms of Forest Service Research Joint Venture Agreement (RJVA) Number 07-JV-11221602 between the USDA Forest Service, Rocky Mountain Research Station, Research Work Unit GSD-4255, Fort Collins, CO, and Dr. Kurt F. Anschuetz, Consulting Anthropologist/Archeologist, Albuquerque, NM. Dr. Carol B. Raish, Research Social Scientist, USDA Forest Service, Rocky Mountain Research Station, Albuquerque, is both a research collaborator and the Forest Service Technical Representative in this undertaking.

The geographic focus of this inquiry is the Preserve and the surrounding portions of the Jemez Mountains (Figure 1). As stipulated in the RJVA (USDA Forest Service 2007), the purpose of this undertaking is to provide land managers, including the Forest Service and the Valles Caldera National Preserve (henceforth “the VCNP,” “the Preserve,” or the Valles), researchers, and members of the public with information concerning the use, access, and fire and fuels management attitudes and preferences of groups using the VCNP area and vicinity.

The Phase I work reported herein consists of two principal parts. The first was background research on forest and wildfire ecology, public perceptions of wildfire, and fire and fuels management on lands making up the VCNP and the adjoining areas of the Jemez Mountains. Although the VCNP occupies the geographic focus of the study, the Santa Fe National Forest administers much of land contained within the study area. This work was necessary for developing foundations with which to organize, conduct, and evaluate a series unstructured, in-depth Expert interviews with knowledgeable members of communities around the Jemez Mountains. The major population centers include Los Alamos, Jemez Springs, the Pueblo of Jemez, Cuba, and Santa Fe. As discussed further below, the Phase I interest groups include recreationists, environmental educators, ranchers, and hunters.

The second part of the Phase I effort was the identification of potential interview candidates and subsequent completion of the Expert interviews. Nineteen candidates were selected and successfully recruited to participate in formal interviews. Each of these discussions focused on an individual’s area of expertise and consisted, on average, of nearly 3 hours of conversation. Information from an additional interview conducted during an earlier pilot project

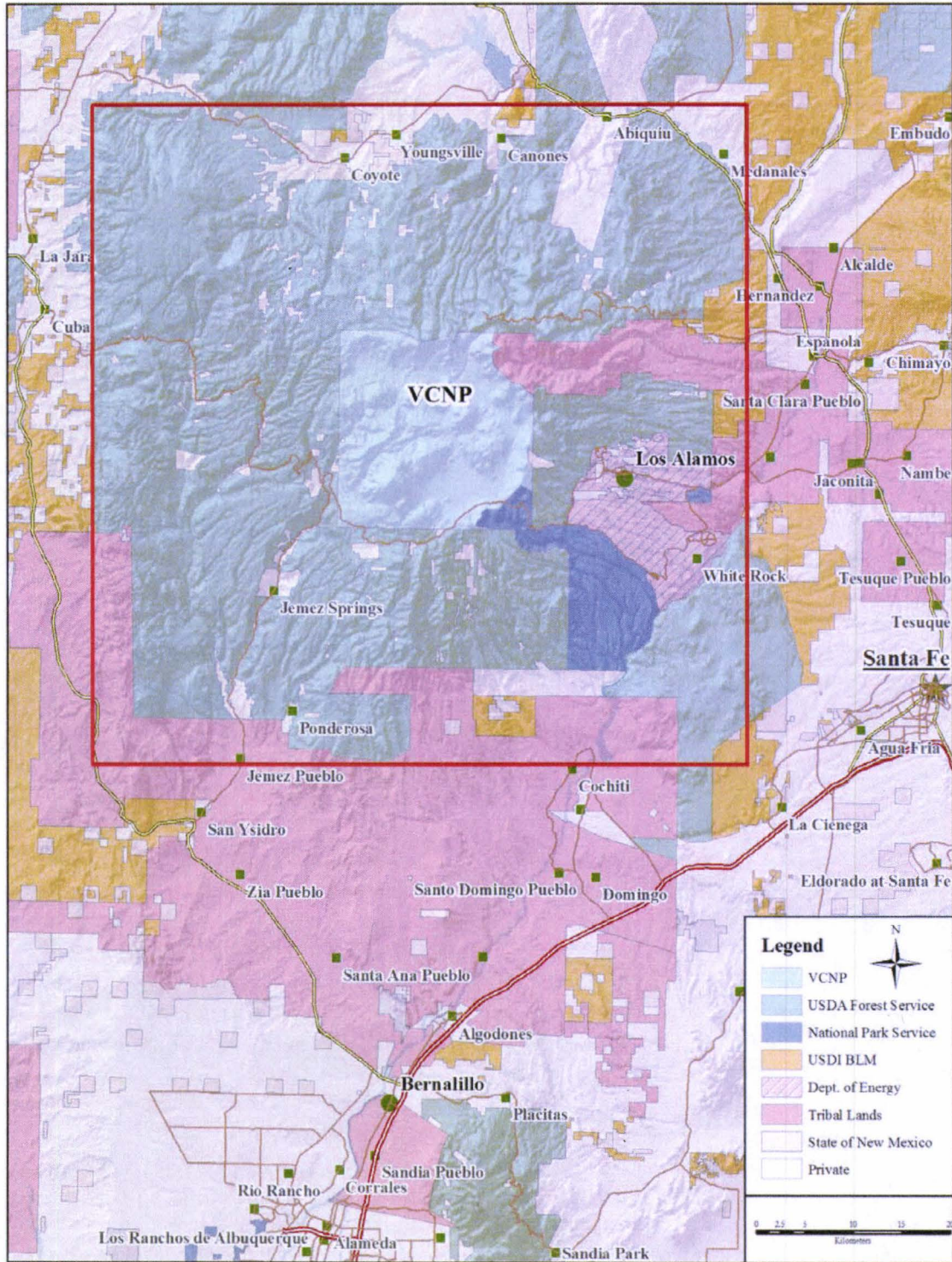


Figure 1. VCNP and Jemez Mountains Study Area.

by Dr. Raish and Mr. Thomas Merlan, Consulting Historian, Santa Fe, was also incorporated in this study.

This progress report consists of three major sections. The first part reviews the methods and procedures followed in designing and implementing the Phase I study. The topics include:

- 1) The development of the *General Expert Interview Instrument* (henceforth, the “Interview Instrument” that provides the underlying framework for documenting the personal views and attitudes of the participants.
- 2) The process followed in identifying and recruiting the 19 participants for the formal Phase I Expert interviews.
- 3) The methods used to document the Expert interviews.
- 4) The rights and privileges of the participants to review their comments for appropriateness, accuracy and completeness throughout the process.
- 5) The use of spreadsheet and relational database software for managing and organizing interview information.

Given the emphasis placed on documenting the personal views and attitudes of the participants, this discussion also introduces the essential caveat that the views and opinions expressed by each interviewee are theirs alone.

The second part provides synoptic summaries of the 20 Expert interviews included in this study. This narrative introduces the participants and offers selected highpoints from each Phase I interview.

The final section of this report discusses how the body of summarized and selectively transcribed quotes is now being used to develop a comprehensive outline for the final project report. This outline, which is flexible in design, will be revised to accommodate relevant new topics of discussion, perspectives, and observations documented during Phases II and III of the study. Use of an interactive process between the final report outline and the relational database’s information management tools will provide the structure for efficiently integrating a wide range of perspectives and insights from the culturally and ethnically diverse assembly of Experts who will be interviewed over the span of this study’s three phases.

Methods and Procedures

Developing an appropriate framework for implementing this anthropological study of people’s attitudes and preferences for use, access, and fire and fire fuels management in the VCNP and the Jemez Mountains was a key undertaking during the early part of this effort. This framework is based on background research on forest and wildfire ecology, public perceptions of wildfire, and fire and fuels management on lands making up the VCNP and the adjoining areas of the Jemez Mountains.

Not only did this framework serve as the foundation for designing, conducting, and evaluating the Phase I Expert interviews, it will provide the bases for integrating the research

findings that will be obtained during the subsequent Phase II and III portions of the study.¹ Among the published resources reviewed, several were particularly useful (e.g., Baisan and Swetnam 1997; Cronon 1996; Daniel et al. 2007; Martin et al. 2008; Touchan and Swetnam 1995; Vale 2002; Winter and Cvetkovich 2003; and Wuerthner 2006). Because they highlighted relevant research topics, these reference materials were influential as we worked to develop our interview instrument that would solicit qualitative information amenable to anthropological evaluation. In addition to assisting us in designing the Interview Instrument, these readings also influenced our thinking about developing our protocols for identifying appropriate Phase I Expert candidates.

Moreover, these readings helped us comprehend the importance of the design of the Interview Instrument. Rather than conducting a rigidly crafted survey consisting of a set of standardized questions and a choice of narrowly defined responses, we were interested in determining how each Experts' familiarity with forest and fire ecology conditioned their specific views on fire and fire fuels management within the study area. To obtain information about the degree to which individual Experts ascribe to the view that the contemporary vegetation, wildlife, soil, and water flow patterns characteristics of the Preserve and the adjoining areas of the Jemez Mountains are largely the result of natural or cultural processes, we needed to be prepared to guide dialogue, at least in a general sense, to ensure the solicitation of essential background information. The Interview Instrument, therefore, needed to structure the interview process to solicit specific information about the participants' perceptions of the degree of overlap between the realms of nature and culture that inform their understandings of two principal topics. The first concerns the degree to which an Expert considers the VCNP and surrounding areas of the Jemez Mountains to constitute pristine or humanized landscapes. The second issue relates to the thresholds beyond which people's activities, including fire management, ranching, logging, and recreational activities, endanger the qualities, which they perceive—and value—as these landscapes' defining characteristics.

An appropriate strategy for eliciting this kind information about personal perceptions and values required the interview process to establish each Expert's sense of place for the study area. A respondent's *sense of place* is relevant to this exercise because it represents the lens with which people perceive their environment and upon which they base their feelings about why a place is meaningful and unique (after Tuan 1977). These perceptions and values, in turn, foster emotions of attachment and belonging (after Relph 1976). They also provide context, which we can use to identify and assess his or their environmental ethics. These views, preferences, and attitudes, which inform an individual's *place ethic*, are important because they provide insight into each Expert's understandings of "appropriate" versus "inappropriate" approaches managing use, access, and fire and fire fuels in the study area.

¹ Phases II and III will consist of focused interviews with selected Native American and Hispanic Experts, respectively, who have interests and experience in the use, access, and fire and fire fuels management in the study area. While these interviews will necessarily cover many of the same issues examined during the Phase I Expert interviews, we expect that these dialogues will also depart in significant ways to address concerns specific to Native American and Hispanic attitudes, preferences, and cultural-historical relationship with the VCNP and the surrounding Jemez Mountains.

The Interview Instrument needed to be more than sensitive to the participants' sense of place. It also required that the Expert interviews give attention to fact that each participant's opinions of use, access, and fire and fire fuels management are grounded in broader perceptions of environmental relationship and process. We realized that to comprehend an Expert's *place ethic*, the Interview Instrument needed to solicit information about why participants either believe that a "hands-off" approach or the implementation of a "hands-on" program for managing use, access, fire and fire fuels will best yield the results that they ideally wish to see and experience in the VCNP and the neighboring mountainous settings.

The Interview Instrument, therefore, required attention to the development of a structure that guided participants to talk about what they perceive to be the *intrinsic* and *instrumental* values of nature (after Proctor 1996). Intrinsic values are those that recognize worth independent of some utilitarian purpose. Instrumental values are those that assign worth based on the ability of some characteristic, or activity associated with a particular characteristic, to serve a useful purpose (Proctor 1996:281).

While the intangible idea of goodness is a common characteristic of intrinsic values, instrumental values are often pragmatic assessments of particular conditions and commodities. Through this exercise, the Interview Instrument channeled the collection of information in a way that moves beyond a participant's *place ethic* to encompass their *wilderness ethic*, which refers to how people express their feelings about what constitutes wilderness and their view of the appropriate scope (if any) of interaction between people and wilderness (e.g., see Cronon 1996). The Instrument simultaneously also gave each Expert latitude to address the issues with they were most familiar and considered most important. The final guideline interview document is included in Appendix A.

The identification of possible candidates for the Expert interview was accomplished through a combination of first-hand knowledge of appropriate candidates by Raish and Anschuetz, referrals by Ms. Hedy Dunn, Museum Director, Los Alamos Historical Society, Los Alamos, referrals by VCNP staff, and referrals by other interview participants. Our principal criterion in selecting persons to interview is that each candidate be acknowledged experts in their area of interest either through their history of involvement and on-hands experience with the VCNP and/or the surrounding Jemez Mountains. We welcomed ardent hikers and fly-fishing enthusiasts whose relationship with the study area is motivated by purely personal reasons, just as much as we sought ranchers, educators, and certified tour operators whose connections with the study area might include economic and/or professional interests.

Formal letters of introduction were usually sent either via USPS mail or e-mail. Raish and Anschuetz occasionally used telephone invitations in the few cases where they knew a candidate sufficiently well or confronted various obstacles (e.g., location and possible window of availability) to written communications.

Working from the pool of people who responded to these initial introductions with interest, Anschuetz and Raish took the next step of evaluating each candidate's potential contributions to the study. In cases where neither Raish nor Anschuetz were personally familiar with a possible candidate, they (often as a team, although sometimes individually) tried to

arrange a pre-interview discussion, which usually lasted about one hour in duration, with candidates introduce the project to fully and formally. The purpose of these discussions was to obtain information to evaluate whether a prospective candidate possessed the interest and background to contribute substantively in the study.

Ansuetz and Raish informally referred to the Interview Instrument as a general guide, which was still in development at the outset of this initial Expert candidate recruitment and evaluation process, during these conversations. Their reference to this instrument was both to inform potential interviewees further about the particulars of the study, as well as to solicit information with which Ansuetz and Raish could evaluate a candidate's appropriateness as a study participant. Besides comprising an opportunity for exchanging information relevant to project implementation, these initial interviews also gave prospective candidates and the interviewers an opportunity to establish some a small degree of personal familiarity and relationship, which often contributed to the ease and flow of the subsequent formal interview discussion.

Nineteen individuals identified for formal interviews agreed to participate further in the study during interviews co-conducted by Ansuetz and Raish. In addition, the proceeds of an earlier interview with Mr. Timothy Johnson, which Dr. Raish and Mr. Thomas Merlan, Consulting Historian, Santa Fe, conducted on January 19, 2007, were incorporated into the current effort. Raish and Merlan performed this interview in advance of the present undertaking as part of a pilot study to assess the kinds of information that might reasonably be considered when interviewing individuals interested in ranching on the Preserve. The list of participating Experts, their affiliation(s), major interested in the Jemez Mountains and the VCNP, and details of their participation in the interview process are summarized in Table 1.

The conduct of the 19 Phase I Expert interviews followed certain formalities. The additional Johnson interview following essentially the same formalities; however, it had a different topic orientation--ranching and ranching history.

First, Ansuetz and Raish reviewed the scope and goals of the study, including the use of the Interview Instrument as a general guideline, with an Expert. Ansuetz and Raish gave each participant a copy of the Interview Instrument at this time. They next reviewed the Interview Consent Form (Appendix B). This certificate formally documents the Expert's agreement to participate in the study and specifies the level to which they agree for their comments to be documented at the time of interview, transcribed, and subsequently used in the project's progress and final reports, or any other product related to the project.

During the 19 Expert interviews conducted by Ansuetz and Raish, participants granted their permission to be documented using a variety of media, including hand-written notes, audiotape recorders, and digital voice recorders. In addition, each of these Experts gave their permission to Ansuetz and Raish to transcribe their comments word-for-word and to use excerpts of these transcripts in the project's progress and final reports, any other product, subject to their final review. Ansuetz and Raish, in turn, committed themselves to provide copies of all written notes and of all transcriptions of the audiotape and digital voice recorder information,

Table 1. List of Phase I Experts and Interviews.

Name	Current Affiliation(s)	Major Interests in the Jemez Mountains and the VCNP*	Digital Voice Recorder File (Run Time)	Audio Tape Recording	Pre-Interview Discussion	Interview Date
Dr. Craig D. Allen	USGS Jemez Mountains Field Station, Los Alamos, NM	Forest ecology, fire ecology, education	WS310078 (0:55:43)	Yes	None	11/3/08
			WS310079 (2:46:23)	Yes		
Mr. Anthony Armijo	Tribal Administration, Pueblo of Jemez, NM	Ranching, culture history, cultural heritage	WS310081 (0:50:23)	Yes	None	11/19/08
			WS310082 (1:20:56)	Yes		
			WS310083 (0:08:15)	Yes		
Mr. William Armstrong	Forest Service, Santa Fe National Forest, Santa Fe, NM	Forest ecology, fire ecology, education	WS310063 (1:42:07)	Yes	8/29/08	10/23/08
			WS310064 (0:19:20)	Yes		
			WS310065 (1:04:16)	Yes		
Mr. Robert Dryja	Pajarito Environmental Education Center, Los Alamos, NM	Education, forest ecology, trails	WS310001 (2:21:23)	Yes	8/8/08	9/13/08
Dr. Richard I. Ford	Arthur F. Thurnau Professor Emeritus, University of Michigan, Santa Fe, NM	Education, culture history, cultural heritage, recreation (fly fishing)	WS310080 (3:08:36)	Yes	None	11/18/08
Ms. Teralene S. Foxx	Pajarito Environmental Education Center, Los Alamos, NM	Forest ecology, education	WS310052 (1:27:00)	Yes	8/21/08	9/8/08
			WS310053 (1:31:43)	Yes		
Ms. Dorothy Hoard	Pajarito Environmental Education Center, Los Alamos, NM	Forest ecology, education, trails, recreation (hiking), history	WS310043 (1:09:42)	Yes	5/8/08	8/26/08
			WS310044 (0:08:45)	Yes		
			WS310045 (1:36:49)	Yes		

Table 1. (Cont'd.).

Name	Current Affiliation(s)	Major Interests in the Jemez Mountains and the VCNP*	Digital Voice Recorder File (Run Time)	Audio Tape Recording	Pre- Interview Discussion	Interview Date
Mr. John T. Hogan	USGS Jemez Mountains Field Station, Los Alamos, NM, Pajarito Environmental Education Center, Los Alamos, NM, and Volunteer Task Force, Los Alamos, NM	Forest ecology, education, trails	WS310061 (1:26:10)	Yes	None	10/10/08
			WS310062 (1:43:29)	Yes		
Dr. Thomas Jervis	Audubon Society, Santa Fe, NM	Forest ecology, education, recreation (hiking)	WS310057 (1:10:44)	Yes	8/25/08	9/23/08
			WS310058 (2:11:10)	Yes		
Mr. Timothy Johnson	Private, Cuba, NM	Ranching	None	None	None	1/19/07
Ms. L.C. ("Chris") Judson	USDI Bandelier National Monument, Los Alamos, NM	Education, recreation (hiking)	WS310076 (1:25:13)	Yes	8/21/08	11/3/08
			WS310077 (1:22:11)	Yes		
Dr. Charles ("Chick") Keller	Pajarito Environmental Education Center, Los Alamos, NM	Forest ecology, fire behavior, education, recreation (hiking and bird watching)	WS310048 (1:16:36)	Yes	9/8/09	9/8/08
			WS310049 (0:27:55)	Yes		
			WS310050 (0:45:32)	Yes		
			WS310051 (0:25:29)	Yes		
Mr. Gregory J. Kendall	Los Amigos de los Valles Caldera, Los Alamos, NM	Recreation (mountain biking, hiking, and cross country skiing)	WS310069 (0:22:45)	Yes	9/3/08	10/28/08
			WS310070 (0:00:46)	Yes		
			WS310071 (0:54:14)	Yes		
			WS310072 (1:46:51)	Yes		

Table 1. (Cont'd.).

Name	Current Affiliation(s)	Major Interests in the Jemez Mountains and the VCNP*	Digital Voice Recorder File (Run Time)	Audio Tape Recording	Pre- Interview Discussion	Expert Interview Date
Mr. Craig Martin	Open Space and Trails, Los Alamos County, Los Alamos, NM, and Volunteer Task Force, Los Alamos, NM	Forest ecology, fire ecology, education, trails history, recreation (hiking and fly fishing)	None	Yes (approx. 0:50:00)	5/8/08	8/21/08
			WS310041 (0:50:01)	Yes		
			WS310042 (0:50:18)	Yes		
Mr. Art Morrison	Service, Southwestern Region, Albuquerque, NM	Forest ecology, fire ecology, recreation (hunting, fly fishing, and cross country skiing)	WS310085 (1:33:24)	Yes	None	3/12/09
			WS310086 (0:53:14)	Yes		
Mr. Gary Morton	Private, Las Vegas, NM	Ranching, recreation (art)	WS310087 (2:32:24)	Yes	None	4/17/09
Mr. Tom Ribe	Caldera Action, Santa Fe, NM	Forest ecology, fire ecology, recreation (hiking), tourism	WS310046 (1:21:28)	Yes	5/8/08	9/9/08
			WS310047 (1:27:25)	Yes		
Ms. Georgia W. Strickfaden	Buffalo Tours, Los Alamos, NM	Recreation (hiking), tourism	WS310054 (0:11:05)	Yes	8/21/08	9/13/08
			WS310055 (1:00:23)	Yes		
			WS310056 (1:41:35)	Yes		
Mr. Don Usner	Ventana de la Luz Photography, Santa Fe, NM, and New Mexico Community Foundation, Santa Fe, NM,	Forest ecology, fire ecology, education, recreation (hiking and art)	WS310059 (1:25:51)	Yes	8/25/08	9/30/08
			WS310060 (1:27:25)	Yes		
Ms. Branden Willman- Kozimor	Pajarito Environmental Education Center, Los Alamos, NM	Education, forest ecology, fire ecology, recreation (hiking, fly fishing, cross country skiing)	WS310066 (1:33:59)	Yes	9/3/08	10/28/08
			WS310067 (1:27:10)	Yes		

Table 1. (Cont'd.).

Note:

- * The Expert's major interests in the Jemez Mountains and the VCNP are identified and ranked in relative order of emphasis in comments made given during the interview. This summary, therefore, should not be considered to be a comprehensive listing of each person's relationship with the study area.

summaries of their statements in the draft progress and final reports, or any other product, copies of their direct quotes included in the draft progress and final reports. Moreover, Anschuetz and Raish have agreed that they will not use any records of their interview with this individual for purposes other than that related to the present project, “Use, Access, and Fire/Fuels Management Attitudes and Preferences of User Groups Concerning the Valles Caldera National Preserve (VCNP) and Adjacent Areas.”

Through this agreement process, each Expert reserves the right to review his/her comments, and use of his/her comments throughout the process for appropriateness, accuracy, and completeness. This right not only covers the present project phase, it also applies to the preparation of the final project report, which will synthesize information obtained through interviews conducted during all three phases of the study. If anyone should determine that any of their comments are not appropriate for use in project products, or they find that their comments have been misrepresented either in their transcription or the context of their use, Anschuetz and Raish are obliged to address these issues to the Expert’s satisfaction before any project work product can be finalized.

As notes previously, a copy of the Interview Instrument was available to the Expert, Anschuetz, and Raish alike during an interview. Although this document typically guided the scope and structure of each of the Expert interviews in a general sense, it was neither used nor intended to be used as a restrictive device. Anschuetz and Raish encouraged Experts to follow their respective interests and comfort levels in sharing information and insights, which they believed the project should consider. If an Expert considered one of the questions in the Interview Instrument to be either irrelevant or inappropriate to their areas of particular expertise, they were invited to pass on the topic or redefine the issue to their satisfaction. While some Experts more or less adhered closely to the Interview Instrument, others focused their comments on their areas of knowledge or proficiency, while others were willing to cast their interview as an interactive dialogue.

In all cases, including the earlier Johnson interview, each of participant showed considerable interest and sophistication in their discussions. Experts responded freely to questions about what the VCNP and/or the surrounding Jemez Mountains means to them personally and what they think about aggressive fire suppression and various methods for managing wildfire risk. They also openly discussed what they viewed as reasonable tactics for managing access to and use of the Preserve within given their respective background, perceptions of nature and wilderness, and professional and/or avocational interests in the study area.

Concerning the topic of fire and fuels management specifically, most Experts talked about the role of fire in maintaining healthy forest ecosystems and the critical need to reduce high fuels loads in the Jemez Mountains generally, but particularly in the ponderosa pine woodlands, following many decades of forceful wildfire suppression. They discussed problems with aggressive suppression, as well as the potential benefits that prescribed burning, mechanical thinning, and “let-burn” policies might bring if used appropriately with respect to on-site environmental conditions in various backcountry and Wildfire Urban Interface (WUI) settings.

Experts shared their knowledge and perspectives about the importance of fire education in building public trust for wildfire and fire fuels management programs designed to mitigate wildfire risk in areas of vital community infrastructure in the WUI. While recognizing that some people have legitimate health issues that need to be incorporated into prescribed burn project protocols, they shared a common opinion that public outreach is essential in helping people understand that the smell of smoke in the air historically was a common occurrence throughout the warmer months of the year. Several Experts not only offered suggestions based on their experiences for informing the public about smoke issues, they shared their insight about helping governmental organizations and private individuals to take proactive steps to inform smoke-sensitive persons of upcoming prescribed burns so they can take appropriate action to minimize their exposure to smoke.

While many Experts expressed concerns over the possibility of escaped prescribed fires in and near the WUI, they discussed that the long-term importance of the need to reintroduce fire into the forest ecosystem was too great to continue to ignore. Some expressed a confidence that lessons learned from the Cerro Grande Fire, which was an escaped prescribed fire that burned through the city of Los Alamos with disastrous consequences in 2000, were contributing to more effective fire fuels mitigation policies and programs that could substantially reduce the risks of escaped prescribed burns. Experts also talked about the responsibilities of private individuals living in the WUI to be involved in reducing the threat of wildfire to their property through proactive fire fuels mitigation measures and

Lastly, participants spoke eloquently about responsible media coverage of wild and prescribed fires alike. Several talked about how the prominence of sensationalized accounts of wildfire's capacity for destruction in media accounts, in combination with the familiar and powerful images of "Smokey Bear" and "Bambi" that have been indelibly engraved in the nation's collective consciousness, has played important roles in shaping a lasting and overwhelmingly negative perception of wildfire. These views and attitudes, in turn, have contributed to a resistance to use of let-burn and prescribed burn fires in fire fuels management. Nonetheless, several respondents offered insights about potential methods for reconciling the seemingly contradictory images and values associated with Smokey Bear and the drip torch in a unified system of forest management.

Regarding the issues of the use and access of the VCNP for a wide range of activities by different stakeholders, participants similarly volunteered their opinions with thoughtfulness and careful consideration. Common topics of discussion included the public's common perception of what *wilderness* is, why the Preserve is an invaluable national resource, the need for greater public access, and the need for regulated multiple use of the VCNP for recreation and education, as well as its culturally and historically established uses for ranching and logging. Regarding multiple use, Experts emphasized that within the program overseeing a particular activity, as a National Preserve, the VCNP should provide equal and transparent opportunities for stakeholders who share common interests to compete for whatever activity (recreation, ranching, logging, etc.) allowed under its management guidelines. Noting the success of the many environmental research programs conducted at the Preserve since its purchase by the U.S., most interviewees articulated the opinion that defining the VCNP as an environmental education center for studying high-altitude woodland habitats, the consequences of environmental change, and the

effectiveness of different fire fuels management techniques under contrasting conditions would be of the Preserve's best uses.

Experts offered critical assessments of various management models, based on their experiences interacting with the VCNP, the Santa Fe National Forest, the Bandelier National Preserve, and the Bosque del Apache National Wildlife Preserve. Mindful that not all activities are compatible and that some activities can be conducted only at much lower frequencies than others with adversely affecting the qualities of the Preserve that they cherish, respondents shared many suggestions about how different uses and access might be differentially scaled or scheduled to sustain the Preserve's intrinsic and instrumental values. Several interviewees identified their heartfelt desire to experience the VCNP's environment and wildlife in solitude and to witness the Preserve's changing beauty of the setting over the full span of the day, including the dawn, dusk, and midnight hours.

Many individuals disagreed with the idea of a presence of large-scale, commercial cattle ranching interest in the VCNP. All of the Experts expressed concerns about the large numbers of elk that enter the Preserve. Although many of the participants enjoy seeing the Preserve's elk herds instead of cattle, they value the environmental qualities of the landscape even more. To many respondents, the present-day elk herd is potentially as damaging to environment as would be a long-term, large-scale commercial cattle operation.

Anschuetz and Raish documented the 19 Expert interviews conducted this study using a combination of handwritten notes, a digital voice recorder (Olympus WS-311M, which creates .wma [Windows Audio Media] format digital files), and an audiotape recorder (Optimus CTP-114, using 90-minute Type 1 cassette audiotapes) (see Table 1 for an inventory of the digital voice recorder files and their respective run times).² Including the time used to set up the interview space, breaks, and final farewells each interview sessions lasted roughly 4 hours. Of this time, nearly 3 hours (ave. 2 hours and 54 minutes) of recorded information. In total, these interviews yielded nearly 54.75 hours of documented conversation.

At the outset, Anschuetz and Raish intended to prepare a word-for-word transcription of each Expert interview session. Starting with the Craig Martin interview, we realized the enormity of this task would quickly deplete project resources. After finishing the Martin interview, Anschuetz and Raish reconsidered the effort and opted to prepare comprehensive written summaries of the interviews, which were supplemented with word-for-word transcriptions of notable comments.

To facilitate the management of the summarized and selectively transcribed interview information, each Experts' comments were individually annotated with their time counter record to document the location of the summarized or transcribed passage in its respective digital file. Additionally, these passages were coded with the corresponding topic number listed in the

² The audiotape machine was used as a backup. Because of a technical problem, the digital voice recorder did not record the first part of the Martin interview. Because of our precaution, however, this malfunction was only an inconvenience; Anschuetz used the Martin audiotape to complete the word-for-word transcription and the comprehensive summary of this interview.

Interview Instrument. These data then were entered into a Microsoft Office 2003 Excel worksheet for subsequent import into a Microsoft Office 2003 Access relational database.

Merlin and Raish documented earlier Johnson interview using handwritten notes and an audiotape recorder (Optimus CTP-114, using 90-minute Type 1 cassette audiotapes). Raish made paper and digital copies of the written summary of this interview available for use in this study. Because only the parts of the interview relevant to the present study are included in the project records, the length of the recorded interview is unavailable.

Digital voice recorder files do not exist for either the first part of the Martin interview or the entire Johnson interview. Although these conversations were tape-recorded, the tape media lack reliably reproducible time counter records. The summarized and transcribed passages from these tapes, along with their corresponding Expert Interview topic number, were entered into the Excel worksheet and Access relational database files, however.

Using the above methods, each Expert's comments are now readily available for searching, sorting, and reclassification during the preparation of the final project report and related work products (pending each Expert's review and approval). Additionally, with the exception of the first part of the Martin interview and entire Johnson interview, individual comments and notable quotes may easily be relocated for review to check the accuracy of its documentation and to ensure that the context of the remark is presented properly.

Synoptic Interview Summaries

Dr. Craig D. Allen

Allen is a widely known and respected ecologist who works for the Jemez Mountains Field Station, which is part of the US Geological Service, maintained at the Bandelier National Monument. The Allen interview focuses on the topics of forest and fire ecology, including climate-induced forest diebacks and post-fire restoration, in the Jemez Mountains area. Given his personal and professional interests in developing a holistic understanding about how living systems function and change, Allen interweaves observations about Jemez Mountain physiography, historical ecology and climate change, tree mortality, fire frequency, and patterns of post-fire erosion and forest succession throughout his discussion. More than just the study of the many tiers of relationship among the plants, animals, water, physiography, and climate of the Jemez Mountains, Allen holds the view that the Jemez Mountains constitute a cultural landscape. This position shows that Allen explicitly acknowledges the essential presence and role of people within the ecosystem.

Citing the Valles' location in the heart of the Jemez Mountains, Allen maintains that all fire and fuels management efforts in the Jemez Mountains need to take the VCNP into account. Moreover, describing fire as an essential part of the ecosystem, he observes that fire—just as forests, wildlife and erosion—does not care about fence lines and political boundaries. Allen believes that the Preserve's forested boundaries are vulnerable to wildfires originating in the surrounding region. The ponderosa pine forest in the Jemez Ranger District of the Santa Fe

National Forest poses significant risk to the populated Jemez Valley area as whole, not just the VCNP.

The theme that environmental variability conditions wildfire behavior underscores Allen's specific remarks about fire and fuels management. Noting the Preserve's topographic and ecological diversity, including the presence of numerous forested volcanic domes separated by broad grassland expanses, Allen suggests that the VCNP possesses significant potential as a laboratory for acquiring comprehensive knowledge about fire behavior needed for developing more effective fire and fuels management plans and actions across the West. In particular, the ecological diversity and physiographic isolation of the domes would allow for experimentation with different fire fuels management techniques with relatively little risk.

Speaking of his experience at the Bandelier National Monument, Allen emphasizes that the scientific contributions that can come from experimental programs can yield a greater understanding of related natural processes. By incorporating these data into the management process, planners can become better equipped to design and implement increasingly effective and more sustainable fire and fire fuels reduction programs. For example, Allen reports that Bandelier's studies of the soil erosion following a reliance on livestock grazing to reduce ground-level fire fuels has given Park management the information that it needs to apply novel new fire management tools and strategies. Allen discusses the use of chainsaws in federally designated wilderness areas as part of its piñon-juniper restoration project to illustrate his remarks. This innovative program not only contributes to restoring the health of this woodland habitat, the design of the activities helps reduce the damaging effects of soil erosion by restoring understory plant growth. Piñon and juniper woodland restoration has an additional benefit for holistic management concerns: The resulting reduction in erosion that accompanies habitat improvements simultaneously protects archeological sites from further disturbance during the erosion of top soil.

Allen offers a number of specific recommendations for fire restoration. The most striking of his comments relates to the efficacy of reseeding programs following forest fires. Although he acknowledges the social and political expedience of seeding as part of publicly visible forest restoration activities following catastrophic wildfires, Allen characterizes this operation as a wasteful expenditure of resources. He states that seeding can be damaging to ecology of recovering burned lands because it often introduces large numbers of invasive plants.

Mr. Anthony Armijo

Armijo is a rancher and tribal administrator at the Pueblo of Jemez. He is also formally trained in natural resources management. Armijo's remarks about sustainable land-use practices draw upon this combination of personal and professional experience, and include a discussion of cattle grazing and fire fuels reduction measures within a comprehensive, integrated framework.

Armijo talks at length about his family's long history of ranching and the practical challenges and benefits of maintaining its current livestock operations. He notes that ranching not only provides material benefits, it helps build and maintain relationships among his family members. Armijo describes the social and cultural benefits that ranching offers to his

community as a whole. He states that ranching not only similarly builds relationships among community members; it fosters the principle of land stewardship among the people.

Armijo emphasizes the potential benefits of use of the VCNP by local ranchers, including, but not limited to, cattlemen from the Pueblo of Jemez. He cites the Pueblo's need for a grass bank, which would allow his community's cattle operators to rest and renew their limited grazing land holdings at home.

Armijo talks about his community's relationship with the VCNP for ranching. When the Preserve announced the goal of running 500 mature cattle on its holdings in 2005 and 2006, it solicited the Pueblo to participate in its grazing program. Although nearly 50 Jemez families run cattle, most have only small numbers of animals. Moreover, the Pueblo's cattlemen tend to favor cow and calf operations over the homogeneous herds of stocker animals now favored by the Preserve. The Pueblo's 23 qualifying operators banded together, but they were only able to assemble about 225 head. The VCNP achieved its animal unit goal for the year by expanding the permitting process to include a small number of non-Indian operators.

Just as the many of the other people interviewed during this study, Armijo expresses general frustration with the Preserve's continual redefinition of its land management practices. Not only is the VCNP now seemingly less willing to work collectives of small, local ranchers in favor of single, large operators, its subsequent emphasis on increasing grazing revenues by expanding the number of permitted livestock places local cattlemen with small operations at a competitive disadvantage.

Armijo discusses the need for the effective, holistic management of the VCNP. His concerns include fire and fuels management to help maintain a healthier environment given that the Preserve forms the headwaters for the Rio Jemez upon which the Pueblo depends. Armijo discusses the need to use of prescribed burning to maintain the Valles' grassland areas, which are significant parts of the Pueblo's cultural environment for reasons other than ranching. Armijo, for example, notes that the grasslands high on Redondo Peak's upper south-facing slope form the shape of an eagle. This distinctive, grassy opening in the forest's canopy is both a powerful symbol and a major part of the Pueblo's identity. For example, this image is depicted on the mountain's side is featured on the Pueblo's official letterhead (Figure 2). He states that it would be devastating to the Pueblo if this grassland patch would be lost because of either woodland intrusion or a catastrophic wildfire resulted in the loss of the forest canopy surrounding the distinctive grasslands patch.

Armijo mentions the Walatowa Woodland Initiative. In a recent undertaking, the community's forestry crews worked with the VCNP to reduce the risk of catastrophic fire on the Banco Bonito. The Pueblo's business utilized the small-diameter trees that its crews removed during their tree thinning operations to produce latillas, coyote fencing, and other forest wood products for commercial sale.

Armijo cites his community's interest in seeing greater numbers of deer and the reintroduction of big horn mountain sheep to the Jemez Mountains. Both animals are important

in the culture and history of the Jemez Pueblo. Elk, he maintains, are taking over the habitat and are suppressing the native deer population.

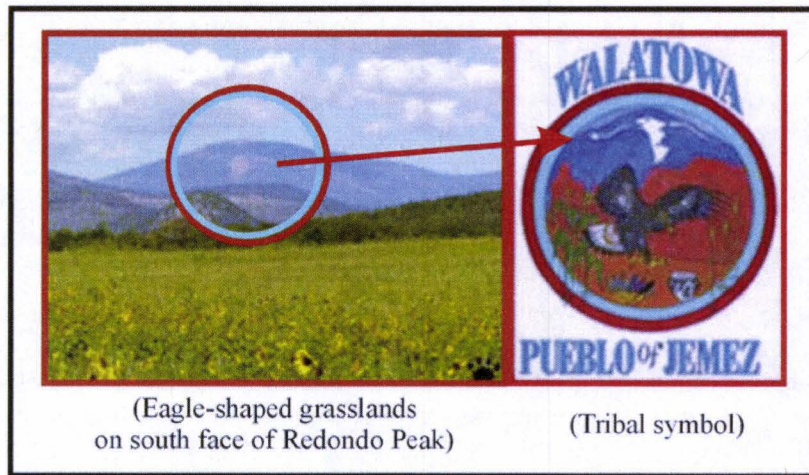


Figure 2. Pueblo of Jemez Tribal Symbol.

Mr. William Armstrong

Armstrong is a professionally trained silviculturist. He talks widely about his experience in pine forest fire management in private industry and government service. He is passionate about the need to reintroduce fire in the ponderosa pine forests, not only to enhance the health of the ecosystem, but also to reduce the risk of catastrophic wildfire along the urban interface effectively and efficiently.

During his work in the commercial timber industry early in his career, Armstrong had developed the understanding that fire was an integral part of pine forests. He became interested in fire fuels management following the catastrophic Dome Fire on the east flank of the Jemez Mountains in 1996. His initial work examined the potential danger for crown fires on National Forests lands around the Los Alamos National Laboratory. He worked subsequently on fire fuels management on National Forest lands within the Santa Fe watershed.

Armstrong discusses forest ecology in relation to his work thinning overgrown forests to reduce the risk of catastrophic wildfire. Armstrong emphasizes the watershed concept and the benefits of mosaic burns throughout his remarks. In response to a question whether the high costs of mechanical thinning are justified if this activity protects homes on the urban interface, Armstrong states that the costs of mechanical thinning are reasonable only if the fire fuels reduction program protects the infrastructure, such as a watershed, of a whole community. Armstrong maintains that private property owners along the interface need to accept the responsibility of protecting their land, structures, and other personal investments. He does not feel that public funds should be devoted primarily for the benefit of a few. In comparison, Armstrong notes that communities relate to the need for significant expenditures of their funds

for large-scale projects to reduce fire-risk in the watersheds upon which they depend. He maintains that people readily grasp the fact, "This is what you drink."

Armstrong's in-depth commentary about the methods and strategies of implementing fire fuels reduction programs and associated efforts in public outreach is noteworthy. He is an advocate of giving local fire fuels managers and contractors the flexibility to devise solutions to local circumstances through a variety of mechanical thinning and prescribed burning techniques. Keenly aware of some people's health issues related smoke, Armstrong discusses what managers can do to anticipate, as well as respond to, these people's concerns. Although he is an outspoken proponent of prescribed burning, Armstrong is not optimistic that the amount of prescribed burning needed to make a difference in the Santa Fe National Forest (and elsewhere) will ever be permitted, primarily given people's smoke sensitivities and perceptions of smoke.

Armstrong recommends that the VCNP make the completion of its long-awaited fire management plan a priority, and he expresses dismay that the position of a fire fuels manager/forester was not one of the first staff positions created at the Preserve. In developing its fire management plan, he recommends that the VCNP include the design and implementation of control studies to teach land managers and the members of the general public alike about how different methods of fire and fire fuels management enhance a forest's ecology, as well as reduce wildfire risk. He maintains that there needs to be an information campaign to help people understand that under the conditions that exist today, land managers cannot prevent forest fires, but only exert considerable influence in how a wildfire burns. (Integrating a bit of humor into a serious message, Armstrong suggests portraying the iconic figure of "Smokey Bear" holding a drip torch as part of this redefined public education campaign.) Armstrong believes that land agencies need to do a better job of creating awareness that fire management is fundamentally a watershed issue.

In his remarks, Armstrong recommends that all area governmental agencies, including the Forest Service, the National Park Service, and the VCNP, exercise greater awareness of their need to develop and maintain constituencies. He thinks that governmental agencies, in general, are alienating the public at the very time that they are most in need of advocates. Without informed supporters, the tasks of developing and maintaining effective fire and fire fuels management programs are much more difficult.

Mr. Robert Dryja

Dryja, whose first career was in health care management, is now a committed educator who draws from his life-long interests in biology and ecology. His goal in working with young people is to broaden their educational experience. He believes that science and mathematics are more accessible and meaningful if they are taught through applied approaches. His enthusiastic promotion of the use of the outdoors as a classroom and laboratory provides the underlying unifying theme of his commentary and the source of practical examples of how hand-on education facilitates learning.

Dryja decries that fact that a large proportion of the young people in northern New Mexico communities have little experience, let alone understanding, of nature and ecology. Dryja readily embraces the Nature Odyssey Program, "No Child Left Indoors."

Dryja believes that access into the Preserve has been too restrictive. He cites his 4th and 5th grade students who have observed, "If you close the Valle Grande totally to public, then nobody will know about it. If nobody knows about it, then nobody is going to care about it." Dryja and his students, however, are equally aware that "You can't open the Valles up too much or it will become another Disneyland."

Dryja is an advocate of the VCNP defining education as one of its principal missions and for the Valles to become a dedicated learning center. He thinks that the Preserve should have programs for children, adolescents, and adults to learn and explore, while simultaneously serving as a refuge as place where people can go to "recharge their emotional battery in nature." He supports the Valles in its existing efforts to bring in experts from a broad breath of natural science disciplines to study and document the richness of the Preserve's geological and biological environments.

Dryja offers a number of recommendations whereby the Preserve's ongoing ranching program is retained to help people understand the balance between the need for agriculture and food, in addition to the need for nature. He calls for limited logging for fuel wood and use of small-scale lumber operations to help thin overgrown woodlands where such activities can be feasible economically. He recommends the development of an active prescribed burn program, which could simultaneously serve management and public education functions on issues related to fire ecology, fire fuels management, and woodland habitat restoration and enhancement. Dryja would like to see the development of a trails program, which links the Valles to other parts of the Jemez Mountain Range. If based on the Boy Scouts of America's Philmount Trials initiative, he believes that this program could effectively combine educational benefits for young people with an economical means to construct the trail system.

Dr. Richard I. Ford

Ford was recruited to participate in this study given his personal enjoyment of fly fishing in the Valles since the Preserve was established. His professional history of archeological, ethnobotanical, and ethnographic study in northern New Mexico, including the Jemez Mountains area, was an additional factor in his recruitment because Ford is a resource for information about indigenous and traditional Native American uses of plants, animals, and fire in the region.

Ford talks about his studies at Jemez Cave, which is located along the Jemez River between Jemez Springs and the VCNP. Noting the predominance of big horn sheep bone and obsidian artifacts in the site's archeological deposits dating to the late Archaic period (ca. 1000 B.C.–A.D. 400), Ford infers that Jemez Cave's residents spent parts of their summers in the Valles' environs hunting big horn sheep and other game animals, as well as collecting raw obsidian. Ford's archeological information not only contributes to a fuller understanding of the long history of the human occupation in the Valles, it provides invaluable insight about the traditional importance of the relationship between people and big horn sheep, which were a

significant component of the Jemez Mountains ecosystem until they were hunted to extinction during the late nineteenth and early twentieth centuries.

Although Ford does not have specific information about traditional Native American plant uses in the Preserve, he shared what he had learned about the Valles' use by members of the Santa Clara Pueblo. These activities include hunting, fishing, trips to the Pueblo of Jemez (with which the Pueblo of Santa Clara maintains close social and trade relationships), and fishing with nets.

Ford reports that he has actively pursued questions about indigenous fire use in forested mountains for managing native plant habitats or upland grazing tracts over his career. He has not yet learned anything specific concerning the VCNP and the surrounding Jemez Mountains. Instead, he shares information about how various Pueblo communities in other parts of northern New Mexico traditionally used fire to manage and manipulate several species, including three leaf sumac, pinyon, and oak. Ford \ talks about other upland forest resources used by the region's indigenous peoples. Speaking of ponderosa pine bark stripping, pinyon pitch gathering, and the selective pruning of certain trees and shrubs for cradle boards and bow staves, he makes the important observation that few archeologists who conduct traditional cultural resources surveys possess the training or experience to recognize, document, and assess these important "living artifacts." This broad lack of expertise highlights a host of significant consequences for fire and fire-fuels management efforts, as well as development planning, that might inadvertently threaten culturally modified trees.

Ford's discussion of his recent fly fishing experiences over the past several years is informative. The quality of his experience suffered greatly during the 2008 season because of the increased number of cattle grazing in the riparian habitat. Although he is not fundamentally opposed to cattle grazing in the Valles, Ford is adamant that the grazing program be structured and implemented to avoid, or at least minimize, the potential conflict between differing interests.

Ford talks about his preference for the Valles to become more open to visitation, although he is careful to concede that the Preserve's management concerns need to include the intensity of use and access by visitors. Ford offers a number of suggestions for enhanced visitor access and experience, including the development of a rim trail and modifications to the fly fishing program. He expresses the belief that the VCNP has the potential to "become one of the great science laboratories in the country."

Ford makes the argument that whatever the VCNP decides about the structure of uses that it ultimately decides to allow, access to programs need to be equitable for members of each stakeholder group. He offers his opinion about the need for fire and fuels management in the Valles, including the use of prescribed burning.

Ms. Teralene S. Foxx

Foxx's professional training and experience in biology. Her long residence in the Los Alamos community and her passion for teaching frame her interview remarks concerning fire ecology and restoration in the Jemez Mountains. Just as she is well-informed and passionate

about the area's forests, she possesses tremendous understanding and compassion for those who been adversely affected by catastrophic wildfire. She believes that a greater understanding of fire ecology allows communities to better prepare for the future through programs to reduce wildfire risk and recover from wildfires. Foxx maintains further that this knowledge is essential for helping people themselves recover in the aftermath of a catastrophic conflagration.

Foxx begins her commentary discussing her history in studying fire ecology following the La Mesa Fire, which burned in the Bandelier National Monument in 1977. She recounts that before this burn, her perception of wildfire was that it was a bad thing, thanks to the success of the "Smokey Bear" campaign of the 1950s and 1960s. Foxx describes her experience studying the ecological consequences of the La Mesa Fire as "a life changing moment" because she saw new plant life growing in the soil left blackened by the fire only a few days earlier.

Foxx tells of her amazement when she witnessed the rapid rate of new growth sustained in the very same plant study plots that she had been documenting before the La Mesa Fire. This experience helped her understand that fire had a necessary and important place in the forest ecology of the Jemez Mountains. She sees fire, even catastrophic wildfire, as one of the ways through which "nature heals itself."

Just as Foxx had comprehended that fire was a necessary part of Jemez Mountain pine forest ecology following the Las Mesa Fire, she learned the importance of grieving following the Cerro Grande Fire of 2000. Her experience was that sense of loss that people felt for the trees on the mountains that overlook Los Alamos was no less real than the loss they felt for the loss of homes in their community. Foxx realized that people sometimes anthropomorphize trees through the intimacy of their experiences with their forests. Moreover, Foxx discovered that when people experienced the process of renewal that immediately follows a forest fire, they were better able to cope with their senses of loss and grief.

Foxx maintains that she was in favor of the initiative to create the Preserve. She does not believe that the implementation of this idea has progressed smoothly, however. She says, "If you want people to love the environment, if you want people to take care of the environment, if you want people to understand your management, you have to let them be there to be part of it." Allowing people the opportunity to experience a place is an essential part of helping them to develop an informed perspective. She warns that if people are not allowed hands-on experiences with a place, then they might develop ambivalent, if not outright negative, feelings about it.

Foxx embraces the NPS model for governing back country access at the national monuments that she has visited. She expressed her frustration with the current level of public access at the VCNP. She notes that although people can stand atop one of the dunes in the Great Sand Dunes National Monument as part of a routine visitor's experience, they usually cannot stand in the middle of the Valle Grande without first purchasing a fishing permit or receiving some special authorization from the VCNP.

Foxx emphasizes that solitude is a quality that she has sought out and has enjoyed in her backcountry experiences. She notes that feelings of seclusion and intimacy with a place are not possible when hikes and other visitors opportunities are strictly regulated as group activities.

Foxx offers a number of recommendations for the management of the VCNP. She feels that fire management should include prescribed burns under very specific conditions to keep it from growing into wildfire. She believes that selective logging is permissible to reduce overgrowth, with the wood resulting from these operations used commercially for vigas, latillas, coyote fences, etc. She suggests that cattle should be grazed in the Valles' pastures on a rotational basis to maintain the integrity of the stream banks and the quality of the forage. Citing her observations that too many elk can be devastating to the environment and that overcrowding can be harmful to the population's overall health, Foxx talks about the need for the VCNP working to become more actively involved in the management the elk herds that congregate on its lands.

Ms. Dorothy Hoard

Hoard was a chemist throughout much of her professional career. Many years before her retirement, she became involved in botany and ecology. She is a long-time avid hiker. Unsurprisingly, Hoard's interview comments emphasize her passions in the Jemez Mountains back county: botany and hiking.

Although she is an advocate for recreational uses in the forests, Hoard is careful to note that she acknowledges there other legitimate stakeholder interests, including grazing and ranching, exist. She emphasizes that every stakeholder, as well as each land manager, needs to consider where the Valles are and what all goes on inside the Preserve.

Hoard gives an eloquent discussion of what, in her opinion, constitutes "wilderness." With this definition in mind, she talks about what she believes to be appropriate uses of the Preserve and why some interest groups are in error when they advocate highly restrictive recommendations governing the Valles' reasonable use. She maintains that the Preserve is not a "wilderness," and that proponents of placing the VCNP in the National Wilderness Preservation system could have the unintended consequence of degrading the "wilderness" concept throughout the nation.

Based on her experience hiking widely in the Jemez Mountains, Hoard is keenly aware of the problem of overgrowth and fire risk. In terms of their potential recreational use, she notes that overgrown woodlands are "unpleasant" to walk in. When talking about the fire risk issue, which she views as an pressing concern, Hoard maintains that active suppression during wildfires is not generally appropriate unless infrastructure is threatened. With regard to the problem of overgrowth in the urban interface, she suggests that mitigation measures, including prescribed burning and mechanical thinning, are both fitting and needed.

Hoard is critical of the VCNP for not yet having completed its fire management plan. She expresses her hope that the eventual plan will divide the Preserve into clearly defined zones in which fire is allowed to burn and in which it will be suppressed. She wants to see a decision-making matrix based on local vegetation (with respect to its fire ecology) and environmental conditions (e.g., moisture, wind, etc.) at the time that a fire is burning. Hoard states her desire that the Valles' land use and fire management plans also take wildflowers into consideration.

The emphasis on grassland management has been so successful in maintaining grasses that wildflower populations are now reduced.

Consistent with her acknowledgement that the VCNP has many contrasting stakeholder interest groups, Hoard addresses the issue of multiple use. Hoard talks about how the management VCNP differs from and is similar to the US Forest Service in this regard. She makes the point that the Valle Grande is an intact caldera, and as such, "It's something that you should pay special attention to."

She states that she has no objections to grazing in the Valles per se; however, Hoard objects to tight controls that unfairly increase operating expenses and make grazing operations unprofitable for local, small-scale concerns. Expressing the opinion that logging in densely overgrown woodlands can be beneficial, she voices having no issues with the idea of logging by local operators who can market small-diameter forest products.

Hoard is supportive of elk and turkey hunts. She voices her concerns over the number of elk, which are damaging the environment and are suppressing the mule deer population through competition.

Hoard talks of her work to document the historic trails that cross into the Valles over the East Wall of the Jemez Mountains, as well as her advocacy for constructing a rim trail along the Preserve's margins. The rim trail, she contends, would to allow people much desired access to scenic overlooks, hiking trails, and solitude, while simultaneously protecting environmentally sensitive locations within the Preserve's interior.

Mr. John T. Hogan

Public education and the topics of fire ecology and fire restoration are emphasized in Hogan's interview. Much of his discussion centers on his work with the Volunteer Task Force, which is a nonprofit organization that Hogan co-founded with Craig Martin (see Martin interview below) in response to the devastation that Cerro Grande Fire in 2000 inflicted on the Los Alamos community in 2000. He has found that the discipline of ecology, which teaches the understanding that people are part of nature, draws people into the program and makes the lessons being taught relevant and accessible. Citing his experience with ecology and public outreach, Hogan maintains, "Hands-on experiential education, for all age groups, is the key to building informed and engaged advocacy and eliciting a sense of personal and community responsibility." In this process, he believes, people fulfill their need to "feel connected to the land."

Hogan's account of his personal experience with the Cerro Grande Fire is compelling and instructive. Although he had been around forest fires for years, "it wasn't ever my forest, my town...Even though I understood it intellectually, it [the Cerro Grande Fire] was emotionally extremely difficult." He found that focused restoration activity was a way to assist in the healing process of many people, including himself.

The Volunteer Task Force taught him much about how effective and productive fire and fire fuels management requires a community. Community, he has continued to learn, crosses administrative and political boundaries. This lesson has significant implications for effective fire and fire fuels management in the VCNP and the surrounding Jemez Mountains.

Hogan is an advocate of having children work with experts and incorporating their service in their studies to facilitate learning. He states, "Experiential education enhances and illuminates the lessons that the landscape itself teaches."

Through the Volunteer Task Force, he has worked at developing programs and curricula through which Los Alamos area 6th and 8th grade students have learned about fire ecology, built trails, and participated in post-fire restoration projects. The latter activities include the compilation of environmental information, planting trees, and building bird houses for species that lost their shelters because of fire. Hogan remarks that the public service component of the Volunteer Task Force initiative helps differentiate it from other programs because the Volunteer Task Force tells the children, "We need their help. And we do." The hands-on component of the Volunteer Task Force is empowering because it teaches young people that they can make a positive difference in their community *today*. (That is, children do not have to wait until they grow up to make significant contributions.)

Hogan has observed that VCNP's woodlands are overgrown and suffer from a lack of biodiversity. He maintains that the Preserve's forests require aggressive thinning and use of prescribed burning. Hogan believes that this effort requires the investment of careful consideration in creating a functioning forest through the development and applications of fire fuels management protocols. He warns that without a clearly specified goal of forest restoration, however, managed forests can begin to resemble artificial plantations. Hogan talks about the need to have a diverse age mix of trees within thinned forests as a hedge against climate change.

It is seldom feasible economically to remove all debris generated during thinning operations. Therefore, Hogan believes that *in situ* mastication is an appropriate alternative as long as attention is paid to the depth of the resulting mulch. This monitoring is needed, he states, to avoid starving the underlying soil of oxygen.

Hogan views the VCNP as a laboratory where researchers, fire managers, and the general public can participate in finding solutions to challenges facing forest managers. He maintains that traditional blanket-type approaches to problems, such as the strict imposition of 9-inch diameter caps during tree thinning operations, are neither effective nor appropriate because they do not take in different topographical aspects, age structure, species composition, degree of canopy closure, etc. Given its environmental diversity, the Valles could serve as a place where new management approaches can be developed through controlled experimentation.

Given the Preserve's visibility in the region, Hogan suggests further that fire and fire fuels management techniques developed in the Valles be used to further educate the public about the essential role that fire plays in sustaining a healthy forest ecosystem. He says,

“People who live in mountains ought to understand that...every time they see a puff of smoke that it’s not death and destruction. Maybe the word that should come to mind is ‘rejuvenation’ or something a little more positive. It doesn’t take long after...beneficial fires to go [out into the forest] and see something better coming back.”

He feels the public should know that even though the Cerro Grande Fire was catastrophic, many of its burned areas are now producing more food for a greater variety of wildlife than before the fire.

Hogan supports the idea of training the residents of local rural communities about sustainable uses of the forests, including livestock grazing and logging. In this way, people are recruited and prepared to become “guardians of the forests” even as they harvest whatever resources they depend in support of their economic subsistence and maintenance of their community traditions. He talks about how trail building is a metaphor of life itself:

“It’s about making your own way; it’s about constructing your own way. It’s a lot about water...You learn a little hydrology. You learn some patience. You learn how to pace yourself when you’re working. You learn about minimizing impact so it doesn’t erode. You learn about steepness, about building bridges. You learn about building rock walls. You learn about teamwork.”

Dr. Thomas Jervis

A physicist by vocation and an avid outdoorsman by avocation, Jervis holds, and relies upon as his motivation, the philosophy that one’s impact on society is based on what one does for society. He became interested in forest ecology while teaching environmental studies at Whitman College in the mid 1970s and became more active in opposition to logging practices in the Southwest’s forests after he moved to Los Alamos in 1980. His interest in fire and fire fuels management has roots that date much earlier in his career.

Jervis would like to see Jemez Mountain ecosystem function more naturally. This goal requires information on fire frequencies, sustainable elk herd populations, etc. Jervis advocates a combination of prescribed burning and tree thinning to reduce the risk of catastrophic fires, and he would like to see managers be given the latitude to allow backcountry fires to burn unimpeded. His emphasis is not so much on particular practice, however; his concern is ecosystem function.

Jervis notes, however, that society can not allow fires to burn without human manipulation around homes and community infrastructure. He states,

“The matter of risk is a matter of recognizing and being able to admit that you are not going to be able to eliminate the risk. The risk of catastrophic wildfire is there. It’s not going to go away no matter what you do. But you can mitigate the risk by doing sensible things like getting rid of some of the dog hair, getting rid of

the ladder fuels, doing lots of prescribed fires at frequent intervals to keep the ladder fuels in check.”

Jervis believes, “People have to understand where they live.” They need to be taught how to make their homes defensible in the case of wildfire. They need to be taught to accept the consequence of their actions if they choose to live in the urban interface.

Jervis offers much valuable insight into what “wilderness” is and how public understandings are based on the popular, romanticized stereotypes, such as those portrayed in the “Bambi” movie. Addressing the VCNP specifically, Jervis does not consider the VCNP to be a wilderness because of its readily visible history of intense use for grazing and logging. (He says that the land was “ridden hard and put away wet!”) Jervis clearly does not intend for his views about the Valles lack of “wilderness” quality to be construed as criticism that diminishes the Preserve’s value. He considers the VCNP to be a “much more important cultural landscape than a natural landscape.”

Whereas many people visiting the Preserve take delight in seeing great elk herds in the Valle Grande, Jervis is concerned by the facts that the elk population is unnaturally large and that the animals are beginning to have a significant negative impact on the ecosystem. If it is at all possible (and he admits that this possibility is highly unlikely), Jervis would like to see the reintroduction of wolves into the Jemez Mountains.

Jervis is critical of the Forest Service, which he describes as working from the premise that people can make a forest however they desire through silviculture. He maintains, “This approach always ends up managing for specific outputs or conditions and ignores ecological processes that stabilize the ecosystem.” While he believes that it is fine to micro-manage an ecosystem if people are highly dependent on its resources for their material survival, Jervis is committed to the idea allowing most forests, including those in the VCNP, to function largely independent of humans. Jervis implies that awareness and experience of natural processes are important for people’s emotional survival.

Jervis decries what he sees as a major problem in VCNP management: An “Everybody stays out!” mentality. Jervis favors greater public access into the Valles, but he realizes that access involves a host of management issues that must be dealt with to protect the ecosystem and stakeholders alike. There is a need to find a balance between too much access and none at all. Stating the belief that most people are satisfied to view nature from a distance, he recommends that the Preserve develop policies that stage public access on different levels to satisfy the stakeholders’ needs while maintaining the integrity of ecosystem. As part of these management decisions, Jervis thinks that it is important for the Preserve to provide context that helps people understand that a natural ecosystem exists. He states, “My idea is that the Valles Caldera National Preserve becomes a National Preserve managed by the Park Service, under the Park Service mandates, but with hunting.”

Jervis has no issue with grazing except that it has often been abused at the expense of the ecosystem. Jervis would like to see the Preserve to again work more closely with local ranchers. He favors the idea of local ranchers forming collaborative organizations that would enable them

to compete for grazing permits. He believes that access to the Valles grasslands could be beneficial to the local ranching community.

Jervis is opposed to the idea of increased motorized public access. He cites erosion issues, damages to habitats and cultural resources, and noise.

Mr. Timothy Johnson

Johnson is a member of a long-time ranching family. The family began homesteading in the Cuba area around 1936. In discussions of large ranchers/landholders in the area in earlier times, Clara May mentioned Frank Bond in Espanola and in the Valle Grande. They recalled other lessees in the Valle Grande, but their family never ran cattle in the Valles. Presently, they ranch full time and operate a trading company and store.

A large portion of his interview and discussion focuses on specifically ranch-related topics, with a long discussion of family history, land use, community interaction, and ranching in the Jemez Mountains area. Both his wife (Charla Johnson) and his mother (Clara May Johnson) participated in the interview, sharing information on family history and the family business enterprises. Their love and commitment to the rural ranching way of life are strong and readily apparent throughout the interview.

Johnson states that he and his wife are the third generation ranching on their property and his family needs to expand the land base of their ranch to bring in more income and to keep the upcoming fourth generation (their boys) in the ranching business. As he says,

“My boys—they are interested in this, like I said awhile ago—why did people leave? They needed more income. You can only run so many cattle—the fourth generation has to expand.”

When asked how using the VCNP for grazing their animals would help their operation ecologically or economically, Johnson replies that he once previously submitted an application for a VCNP permit, but he did not win the contract. Johnson has had to look elsewhere to grow his operation to keep it profitable.

Johnson stresses the theme of multiple use and active management on the VCNP and considers the importance of these uses to the Preserve. For example, he believes fire and fuels management must be undertaken or the place will become a “tinderbox.” Fuel wood should be sold. Johnson views prescribed burning as effective. He concedes that prescribed burning has been overused in some places but feels that it has not been used enough on the VCNP in recent years. He also states that smoke could be a health concern for some people. In his view, the chance of a prescribed burn escaping is increased by the failure to burn. He comments that both thinning of small diameter trees and logging are needed in the area, and supports combination treatments, when properly managed, such as burning, mechanical thinning, and logging with herbicide use “at the right time.”

Johnson recommends that elk should be managed just like cattle. Speaking of cattle management, he prefers a mix of cow and calf, and stocker operations. He states that fire management, sport hunting and fishing, cattle, logging, and other uses can all be done simultaneously. Although he prefers seeing cattle over elk on the Preserve's lush grasslands, he feels there's room for all, at least for the next 20 years. Although the Valles Caldera is not significant to his family currently, it could become so if he were able to obtain a VCNP grazing permit. Johnson stresses there should be fair access for all types of users and that the most important consideration is how the land is used and managed.

Ms. L.C. ("Chris") Judson

Judson served on the Fire Information Office (FIO) teams during the La Mesa, Dome, Lummis, and Cerro Grande Fires, all of which occurred on the east flank of the Jemez Mountains between 1977 and 2000. To be effective in this position, Judson has had to learn about fire ecology, as well as how to converse with the public who generally lacks an understanding of wildfire ecology and behavior. A major part of her discussion focuses on the duties of FIO staff members during burns, as well as her personal observations and feelings during the Cerro Grande Fire and its aftermath.

Judson's commentary about the sense of grief that gripped the Los Alamos community following the Cerro Grande Fire is poignant. She relates that residents were so traumatized by the fire's impact to their neighborhoods that they were initially unable to drive safely through town when they were finally allowed to return to their homes; the damage they witnessed was too distracting and shocking for them to concentrate on where they were going in their cars. People carried water, which they would give to young trees, when they hiked into burned areas. Even now, the better part of decade later, Judson remarks,

"I just keep wishing that the...dead trees would fall down because... You look up there and it's green now..., but on the ridgeline it looks like a comb because of all those...dead trees...If they would [fall down], then it would stop reminding you, and it would stop looking like it was a burned area."

Judson recounts how people coped with their senses of loss and overwhelming grief by turning to their community for support. A radio station sponsored a website on which residents, who lost their homes, could identify their needs. People put green ribbons on their car antennas to symbolize the recovery of their community. The town held a hero's celebration for the fire fighters on the first anniversary of the fire. Judson reports that large numbers of people (500 or so) showed up for volunteer days because they cared so much and wanted to help.

Judson talks about going out to areas that burned during the Cerro Grande Fire to see the new growth. She has been taking people out to the La Mesa Fire to see the recovery that has taken place over the 30 years since that burn occurred. These outings reinforce her knowledge, and those of her guests, that recovery in the areas burned during the Cerro Grande Fire is surely underway.

Despite the trauma of the Cerro Grande Fire, Judson feels that the people of Los Alamos now understand that fire is an essential component of the Jemez Mountain ecosystem. She credits Craig Martin, who was hired by Los Alamos County (see Martin interview below), in large measure, for educating the public about fire fuels mitigation. She feels that although the Bandelier National Monument is subject to much more scrutiny than the County when it plans and enacts prescribed burns, people are becoming increasingly comfortable with the idea of the National Park Service again using this technique. She hopes that the Monument will be able to conduct prescribed burns on an increasingly regular basis as it earns back the trust of the Los Alamos community.

Judson discusses the Bandelier National Monument's back country permit program. This process might serve as model for the Valles to consider and refine if it should implement its own back country program. Judson states that the Monument requires permittees to sign in at the Visitor Center in person, tell the staff how long they will be in the back country, identify the route they're taking, and where they are going to camp each night. Because Bandelier tries to emphasize solitude through their permit system, applicants agree "to be out of sight and sound of other groups, so that everybody hopefully has the illusion that they've got the whole place to themselves." They are asked to return to the Visitor Center to sign out when they leave to reduce the likelihood of false searches.

Judson feels that this on-site orientation requirement has proven to be a highly beneficial for visitors and staff alike. Visitors receive valuable information and context before embarking on their backcountry hike, while the Monument obtains the information that it needs to manage the program, as well as to monitor the whereabouts of its backcountry visitors.

Dr. Charles ("Chick") Keller

Keller's academic training is in astrophysics and fluid dynamics. He has well-developed interests in botany and ornithology. While the latter pursuits underlie his familiarity with—and his experiences—in the VCNP, his professional concerns in fluid dynamics have contributed to his understanding of wildfire behavior. Keller admits that his concern with wildfire is deeply personal: "Having your house burn down [during the Cerro Grande Fire]...focuses your attention: Why does this happen? What are the dynamics?"

Keller has observed that firefighters are generally able to suppress and manage small (100 acres or less) wildfires; however, he maintains that firefighters are generally ineffective when burns grow larger than about 1,000 acres, particularly if there are frequent (1 or 2 weekly) wind events. (He says, "You can't fight nature with a shovel.") Keller feels that forest fire suppression is expensive and a drain on agency budgets. He suspects that managers often need to use their limited research funds over the short term to fight wildfires, thereby hampering the ability of the people trying to understand fires and to learn what they can do about them over the long term.

Keller advocates allowing fires to burn in remote areas. With regard to the issue of wildfire on the urban interface, he believes that individual homeowners have the responsibility to make their property defensible. "Fires need something to burn. They don't just magically get

your house.” (Keller admits that he lost his home during the Cerro Grande Fire out of “ignorance” and not taking the initiative to learn how to protect his property before the conflagration.) In the cases of backcountry and urban interface wildfires alike, Keller believes that managers and firefighters should receive amnesty for whatever decisions that they make while working fires. This way, people with the most knowledge and experience of which techniques worked and failed under different conditions might be more willing contribute to a comprehensive understanding of fire behavior.

Although he does not consider the VCNP to be a wilderness, he finds that it has a remarkable, dramatic effect on people. Keller understands that people want the wilderness to reclaim the Preserve.

Keller discusses the ecology of the VCNP at length. He offers many observations, including the contributing role of cold air drainage in sustaining the Valles’ grasslands, the ingenuity of coyotes in learning to use cattle fences to hunt elk calves, and elk migration patterns.

Given that the VCNP is supported with public funds, Keller believes that there needs to be greater access into the Preserve, least the Valles further alienate its constituency. He outlines several ideas, which reflect a staged approach in providing public access.

Keller talks about wanting to see cattle ranching to be an economically and environmentally sustainable cultural practice. He advocates the development of management policies that rotate cattle and visitors among different areas of the Preserve to minimize the potential that ranching and recreational activities cross paths with negative consequences for either interest group.

Keller views the Valles as an important laboratory where much needed environmental research can take place. For example, he believes that there should be much more study of the fire ecology in the Valles because it is such a unique and diverse landscape. That is, the Valles could offer researchers the opportunity to study how fire behaves under different circumstances. Keller expresses the wish that the knowledge for suppression becomes sufficiently robust through research that people could have complete control over fires “so that we can put a fire out if we need to. That way, we can let them burn with impunity.”

Keller wonders if the timing of prescribed burns in the region’s ponderosa pine forests might be affecting seed germination and seedling growth; this question could be answered through scientific study. He would like the VCNP to consider the possibility partnering with LANL, which already has developed a fire behavior modeling program, to run scenario fire models to learn what is likely to happen under differing conditions. This way, the Preserve could better prepare itself in the event of a wildfire.

Moreover, Keller thinks that the ongoing studies of cattle grazing in the VCNP are important for better understanding ranchland ecology. Although the damage caused by past logging operations was severe, Keller acknowledges some residual benefits. He states his hope that the VCNP might even someday consider conducting logging experiments.

Mr. Gregory Kendall

Kendall has been involved with the VCNP in a variety of capacities—volunteer, cyclist, hiking enthusiast, and friend—ever since he and his wife moved to New Mexico in 2004. His remarks convey his love for the Valles, the joys of many of his experiences there, and his hope that others might experience the pleasure of this landscape for themselves. He also expresses the frustrations that he has sometimes felt during his interactions with the VCNP's administration.

Kendall's introduction to the Valles came shortly after his family moved to Los Alamos. He knew that we wanted to get involved with the VCNP so he might get to know this landscape first hand. A big mountain bike event, organized by the VCNP and a local club (Tough Riders) working in collaboration, was his entrée. During this event and another that he participated in the following year (2005), Kendall experienced a series of highs and lows. The highs were related to his opportunity to explore the Valles; the lows came, in part, because of repeated break downs in communication and inconsistency in management policy.

Kendall describes his disenchantment and frustration. He feels that the Preserve, as represented by the Board of Trustees and some staff members, at times neither welcomes nor understands the concerns of the VCNP's constituents and neighbors. Kendall states that during public meetings, some VCNP Trust members have made "a big point" that people should explore areas surrounding the Valles rather than continually petition them for greater access to the Preserve. At other times, some staff members convey the impression that "they don't really want involvement of community-based groups to help out."

Despite his frustrations, Kendall has continued to volunteer at the Preserve. He does so because he is drawn to the Valles because of its qualities of beauty and solitude. Although public access is usually restricted, Kendall has learned that volunteering is a good way to have quality opportunities to experience this landscape with relative freedom, even while contributing labor to enhance the property.

Kendall would like to see more hiking and mountain bike opportunities, including prepared trails. He recommends paving the principal access road into the Preserve, providing a picnic area, and constructing a visitor center, preferably placed relatively along the margin of the Valle Grande not too far from State Road 4. The visitor center would provide amenities sought by families, while not being too intrusive. It could provide an overlook of the Valles, as well as a platform for night sky viewing.

Kendall's vision of a visitor center is generally in keeping with his view of developing and managing a series of staged access opportunities ranging from facilities dedicated to the casual passerby to remote backcountry opportunities for serious hikers. He does not want to see enhanced motorized vehicle access, primarily because their noise would detract from the quality of solitude that the Preserve can offer. "It's a bowl, and sounds echo in this place."

Kendall does not feel that grazing is necessarily incompatible with the recreational opportunities that he seeks and enjoys. He believes that the 2008 grazing program, with its 2,000

head of cattle, was successful and that the Valles probably could sustain even larger numbers of cattle without detracting from his enjoyment. Kendall notes, however, that much depends on the personality of the cattle operator and his/her willingness to interact with the public.

Mr. Craig Martin

Martin, who is outdoor enthusiast, author and educator, talks in depth about fire, its role in ponderosa pine forest ecology, and his perceptions of wilderness. He shares his experiences and observations of the 2000 Cerro Grande Fire and his subsequent work with the Los Alamos County's fire fuels management program. Martin offers rich insight about working with the public to enhance their understanding of fire ecology and the need for, and benefits of, fire fuels mitigation on the urban interface.

Martin is a principled advocate for the reintroduction of fire into the ecology of the pine forests in the Jemez Mountain. He cites the benefits that fire offers to forest habitats. He calls for prescribed burning whenever possible to reduce the risk of catastrophic wildfire in backcountry settings. He advocates use of more expensive fire fuels management techniques, such as mechanical thinning and mastication of thinned waste, to mitigate wildfire risk in areas along the urban interface to protect homes and infrastructure.

Martin's comments are invaluable given his great experience of working with the public to help them understand the need for the implementation of "conservatively aggressive" fire and fire-fuels management techniques. Through these efforts, Martin has earned the trust and support by a great many people in the Los Alamos community for the measures that he advocates and practices. He offers many salient recommendations in this regard. Martin effectively discusses the need for a perpetual commitment in maintaining the both the fire fuels management and public outreach programs. A unifying theme in Martin's observations is the people need to be become accustomed to both of the idea and presence of fire in the pine forests surrounding their homes.

Whereas Martin emphasizes the use of prescribed burning, thinning, and mastication in fire risk mitigation in relation to his work, he calls for the simultaneous need to develop complementary land management policies. He states, "Mitigation has a very specific target: to reduce, or to change, the nature of fire when it happens." Land management policies, such as those governing livestock grazing, logging, and fuel wood cutting, have very different objectives, but they can contribute to the overall reduction of fire fuels and wildfire risk. For example, Martin believes that the Dunigan Estate implemented some logging activities, which were small-scale initiatives based on a highly selective management approach that yielded practical benefits, during its management of the Valles. Martin's philosophy, therefore, embraces the idea of multiple use within a holistic, integrated management approach. Martin applauds the VCNP specifically for developing the scientific background needed to achieve this kind of goal.

Martin has an ambivalent feeling concerning the Trust's policies that narrowly limit public access to the heart of the Valles. On the one hand, he notes that he prizes the feeling of isolation and solitude that he has experienced when he has been in remote areas of the Preserve; he commends the Trust for making these experiences possible to him. On the other hand, he

acknowledges that there are many other people who desire the opportunity to explore the Preserve. Citing the mountain biker gatherings as an example, Martin suggests that the VCNP might consider developing a management approach that offers different kinds of access through a closely supervised calendar of events and map that tracks uses of different activity areas. This way, various activities, such as mountain biking and hiking, can be segregated, even if they occur on the same day. This kind of coordinated management approach offers the potential to give many different recreationist users opportunities to enjoy the kind of particular experiences they seek.

Martin expresses interest in the rim trail proposal forwarded by Dorothy Hoard (see Hoard interview above), among others. He embraces the idea because it would give the public hiking opportunities with highly prized overlooks of the Valles, while minimizing the potential for adverse impacts on sensitive riparian areas in the meadows, etc. He is a realist, however; Martin observes that a rim trail would require unparalleled cooperation between the VCNP and other agencies, particularly the Santa Fe National Forest, before it could ever become a reality.

Mr. Art Morrison

Morrison has had a widely ranging career with the Forest Service, with his activities including those of a timber stand improvement crew member, a “smoke jumper,” and an official with the Southwestern Region’s Public and Legislative Affairs Office. Besides having extensive experience with fire management, Morrison is an avid outdoorsman and hunter. He is well acquainted with the Jemez Mountains area through his recreational activities.

Morrison has fished and skied in the Valles. He has hunted turkey and elk, as well as “stalked” mule deer, in the Jemez Mountains. He has not hunted elk in the VCNP. Although he has not participated in the Preserve’s elk permit lottery, he views this program as a revenue generator that has been unfairly impeded by the State of New Mexico Fish and Game Department and the VCNP’s failure to attract a truly national audience for its hunts. Morrison believes that the Preserve should be allowed to handle its hunting program to maximize its returns, just as the Dunigan Estate was able to do as a private enterprise.

Morrison views logging as characteristically being more damaging to the environment than grazing. Nonetheless, considering the dog hair ponderosa stands, he wishes that there existed an economic market for small-diameter trees, such that they could be selectively logged as part of a fire fuels reduction enterprise in anticipation of prescribed burning. “You can’t run fire through it [the VCNP] until you’ve cleared up some of that mess, or else you scorch out the whole stand.”

Morrison views fire as a necessary part of the ecosystem. During aboriginal times, there would have always been smoke in the air due to the frequency of fires in the Southwest.

Morrison questions the economic sense of battling the big catastrophic fires; they are virtually uncontrollable. Instead, he suggests that active suppression should be used on portions of fires that either are controllable or threaten infrastructure. He is in favor of “let burn” tactics on remote portions of forests. Wildfire management decisions should be flexible and based on

local conditions at the time of the burn. He calls upon land management agencies to form partnerships with area communities. This way, the agencies can draw on the knowledge and resources that local communities have to offer more effectively, thereby better equipping themselves to the business of managing wildfires when they occur.

Given the Valles' past land use history, Morrison does not view the Preserve as wilderness. Nonetheless, he finds it beautiful and a remarkable resource that warrants protections that neither the Forest Service nor the National Park Service normally affords their holdings. Morrison suggests that the VCNP might be best served by adopting a wildlife refuge management approach. He maintains that even though a principal purpose of a wildlife refuge is to preserve wildlife, it allows for recreational opportunities such as hunting, fishing, multiple use, etc. Citing the Bosque del Apache National Wildlife Preserve as a possible management model, Morrison notes that this Preserve has simultaneously made habitat improvements, created a diverse and functioning ecosystem, and allowed public access.

Morrison recommends the development of cooperative agreements among the adjoining political subdivision land management agencies in the Jemez Mountains area. While he calls for mitigation measures to protect stands of old growth in remote areas from wildfire damage and around urban interfaces, he thinks, "as a practical matter, fire's going to clean up this mess" in the Jemez's woodlands.

Morrison talks about the media's representation of wildfires. Even though news reports focus on the damages wrought by catastrophic fires, in many cases, much of the burning actually did a lot of good. So-called "catastrophic" fires actually present educational moments because there is a good deal of media coverage and the public is paying attention. Morrison wishes that when a prescribed burn is scheduled to take place, the media should be invited out to document the burn. They should be invited to report on the new growth that has occurred six months after a prescribed burn has taken place.

Mr. Gary Morton

Morton has been a rancher his whole life, with his talent in painting and sculpture being a secondary interest that often draws upon his passion for the "cowboy" way of life for inspiration. Having lived and run 2,000 head of cattle in the VCNP during 2008 grazing season, he is highly knowledgeable of the Preserve's landscape, natural environment, and administration. Throughout his interview, Morton makes a well-reasoned and impassioned argument for why cattle ranching should be maintained as an integral part of the VCNP's mission.

Morton talks about his having run 2,000 head of cattle on the Preserve for four months during the 2008 lease period. He considers both the successes and disappointments of his experience. Overall, Morton found the positives outweighed the negatives, and he says that he now contemplates submitting a new proposal for the competitive grazing lease rights in the future. Although he would like to see the Trust increase the number of head authorized by the permit beyond the 2,000-head limit that applied during his lease, Morton is so serious in his desire to return to the Valles that he is actively weighing options that would enable him to compete for more permits that set substantively lower animal thresholds. Although he says that

the VCNP is by no means pristine, the geography and vegetation of this place draws him. He would like to spend additional summers ranching cattle in the Valles.

Morton contends that the Preserve could easily sustain a larger number of cattle without damage to the environment. He offers both a number of observations and management recommendations in support of his argument. For example, Morton suggests that nearly the entire acreage of the Preserve should be included in the grazing program, with existing fences being used to rotate livestock among different settings to sustain grass production and minimize the potential for environmental damage by intense trampling. He talks about how a fire and fire fuels management program could benefit grass production, as well as the forest's ecology.

Although Morton believes, "Forage is never going to be an issue," he readily admits that the hard part, "as far as the Preserve goes, is managing conflict" between the livestock operator and some recreationists, particularly fishermen. Having identified this issue, Morton offers a number of suggestions to reduce the potential for conflict. (Morton does not carry false hope that cattle ranching will ever be accepted by all of the Preserve's recreationists, however.) His suggestions include revised management procedures, such as providing cattle access to water in ways that do not compete with fishermen. By expanding the range that the cattle can graze within the Preserve, Morton suggests that the riparian areas would be subject to less trampling. Moreover, he believes the cattle would benefit from having access to less "washy" forage.

Morton disagrees with suggestions that local ranchers be given preferential access to the Preserve's grazing lease rights. He believes that, because the VCNP is public land, all ranchers should have the right to bid on the Valles' grazing leases. Morton considers the idea of nonlocal and local cattle operators pooling their efforts in support of a cooperative grazing lease program as possibly possessing merit. He recognizes that the VCNP would first need to provide guidelines for implementing a cooperative venture. For example, would all of the participants in such a cooperative enterprise have equal access to the Preserve? Or would only the largest operator(s) have the privilege and responsibility of supervising the cooperative's herd?

Morton's comments are not all strictly limited to the material business of running livestock and managing range land. He suggests that the VCNP could effectively incorporate the Valles' long ranching history in the developing materials and activities that promote the Preserve to its national constituency. The periodic scheduling of special events at the Valles that revolve around "cowboy" lifeways would be a draw for people interested in ranching and ranching history. He believes that some of these activities could form the basis of new revenue generating operations, which could benefit the VCNP and entrepreneurial "cowboys" economically.

Morton feels that public access needs to be carefully managed. To the critics that suggest removing all cattle and opening the Valles to more people, Morton says, "If they think 2,000 cows damage it, just turn 2,000 people loose."

Mr. Tom Ribe

Ribe, who was raised in Los Alamos and academic training in biology, has a long history of relationship with the Jemez Mountains. The Bandelier National Monument and slopes

bordering the west side of his home town have been principal foci of his interest. He first got to know the Valles, which was then owned by the Dunigan Estate, as a youth. Ribe has a strong background in wildfire risk and fire fuels management. He has participated in many prescribed burns.

In the early part of his interview, Ribe talks about his background and interest in fire, as well as the major factors (e.g., wind, humidity and topography) that influence fire behavior. He states, "Fires really are particular to the places where they are happening... They reflect that place, and they reflect the weather." Wildfire, he maintains, is "a force of correction" past abuses. Wildfire, in turn, sets the stage for the landscape to rebuild.

Ribe is critical of outright fire suppression except in instances where infrastructure is threatened along the urban interface. Given their benefits to forests, he calls for policies allowing natural fire events, such as wildfires caused by lightning strikes, to burn across large areas whenever possible. When it is not possible to allow fires to burn naturally, Ribe would like to see fire management teams employ techniques "to herd and steer fires," not only to protect human infrastructure, but also to burn in ways that benefits the ecology of the forests. He refers to this strategy as one that "manages fires on their margins."

Ribe would like to see much greater use of prescribed ignitions in the Jemez Mountains, including the VCNP. Because mechanical mastication is expensive and unnatural, "Fire has to be the main element." Burning, once reintroduced, has to be sustained over the long term, least the forests return to an unhealthy, overgrown state.

Speaking of the VCNP, Ribe offers a number of recommendations for fire fuels management to reduce the risk of catastrophic wildfire in the Valles. His underlying concern is that the present condition of the forests is not always conducive to low-intensity burns. Hotter, riskier, fires are needed to kill trees larger than 3 to 4 inches in diameter if the goal to reduce the threat of catastrophic wildfire is to be fulfilled.

Ribe demonstrates his sensitivity to the challenges of wildfire management on the urban interface. Because fire suppression close to homes and critical infrastructure has allowed fire fuels to build, there is a need for fire fuels mitigation programs that prepare properties for the eventuality of fire. In this effort, there needs to be education of homeowners and institutions equally. Ribe maintains that governmental agencies and insurance companies need to require homeowners' compliance. He maintains that people living in or near the urban interface need to learn to accept the necessity of smoke in the air and low-intensity fires up to their backyard fences, both for the health of the forests and the safety of their neighborhoods.

Ribe shares keen insights when talking about his perceptions of wilderness. He believes that humans can be important parts of wilderness and that "a lot of...scientifically attuned human resource management is highly appropriate" in wild areas. He believes that both the National Park Service and the VCNP have been effective in their on-going efforts of sustain biodiversity and ecological resilience.

Ribe talks powerfully about why the Jemez Mountains and the Preserve are important to him. He finds that he has a nearly “spiritual connection” with this landscape. In addition to its great beauty, Ribe describes the Valles’ silence and solitude among its greatest assets. For this reason, Ribe is critical of land use activities, including recreational vehicle rides, that do not respect these qualities. He is an advocate of the development of alternative economic enterprises, such as ecotourism, as a way to protect the landscape from development and ventures based on resource extraction.

Ribe believes the Valles are far too valuable for recreational and educational uses to continue to support livestock ranching or logging as significant commercial enterprises. He allows room for VCNP managers to include sustainable, small-scale timbering and ranching operations in their land use plans, however. While the former can contribute to the goal of fire fuels reduction, the latter can contribute to maintaining local cultural-historical traditions. These activities possess the potential to provide information about how to enhance the sustainability of logging and ranching elsewhere in the nation’s forests.

Ms. Georgia W. Strickfaden

Strickfaden, a life-long resident of Los Alamos, owns and operates a small, local tour company, *Buffalo Tours*. An outdoors enthusiast, she is intimately familiar with the east margins of the Jemez Mountains, having hiked and horseback ridden in this area nearly her entire life. Although not formally trained in biology, she enjoys observing local plants and animals. She has interests in local history. Strickfaden has a deep emotional attachment to this landscape and is cognizant of her community’s place within it.

Strickfaden recounts growing up in Los Alamos in the introductory part of her interview. Speaking of her outdoor adventures in the forests surrounding the community, she is very aware that the forests, which she used to explore freely during her youth, are now much more overgrown and pose significant fire dangers.

Strickfaden recounts Los Alamos’ history with wildfire, including the La Mesa (1977), Dome (1996), and Cerro Grande (2000) burns. She describes the trauma and tremendous sense of loss that she felt when dealing with the consequences of the Cerro Grande Fire to her home, the Los Alamos community, and the surrounding landscape in moving detail. She says, “Grief is hard work.” To compound matters, Strickfaden feels that there was no immediate escape: The forests in which she had formerly sought refuge no longer exist. “It really wears on you seeing the killed forest right there where there used to be living green things.” Only once she drives beyond the burned areas into the greenery of intact woodlands, “the weight and reminders of the stress” of the Cerro Grande Fire melt away.

Strickfaden recounts incorporating tours of Los Alamos’ burned neighborhoods into her business operations, initially in response to requests from her clients. She talks about her realization that these tours not only provided her with an opportunity to teach the public about wildfire and the responsibility of people living on the urban interface to take responsibility for protecting their property from wildfire, they helped her in her own grieving process. With time,

Strickfaden has begun to appreciate seeing the rock formations that were visible on the mountain slopes that were exposed to the people of Los Alamos for the first time by the Cerro Grande Fire.

Strickfaden would like to see the VCNP remained relatively undeveloped, even though she acknowledges that it is not a pristine wilderness given the intensity of its past uses for livestock and logging. She advocates a kind of staged public access, including drop off points for backpackers, snow tractor rides during the winter, and vehicular tours that would give people tours through the Preserve in comfortable vehicles. She thinks there should be opportunities for overnight (primitive) tent camping; however, she does not want to see recreational vehicles or the infrastructure for such equipment being allowed into the VCNP.

Strickfaden believes that education should accompany recreation in the Preserve. For example, she recommends that the VCNP begin planning prescribed burns to coincide with the Albuquerque International Balloon Fiesta schedule each fall. This way, the Preserve would be able to conduct an annual educational program that would draw upon a diverse audience from across the United States (and beyond) for a demonstration of forest ecology and the essential role of fire in sustaining this pine forest ecosystem.

Strickfaden is critical of the VCNP for not being a better neighbor in the greater Jemez Mountain community. People would like greater opportunities to access the Preserve. The VCNP has neither the staff nor equipment to fulfill these requests. Many local businesses would supply the staffing and equipment. Strickfaden believes that the VCNP could partner more with local businesses, which can help provide controlled access, educational information, and recreational experiences to the public for the benefit of all parties. The VCNP and local businesses could then share in the revenues. Strickfaden, however, emphasizes, that these opportunities need to be developed equitably, such that the larger businesses with larger vehicles do not receive unfair competitive advantages in accessing the Preserve (such as in the form of lower average per capita entry fees) than smaller operators who operate smaller vans.

Mr. Don J. Usner

Usner has a background in biology, environmental studies, and cultural geography. He understands both fire ecology and the relationships that people maintain with wild lands. He is an established author and photographer. One of his recent works is a book of essays and photographs about the VCNP that he developed in collaboration with William de Buys (de Buys and Usner 2006). Usner was raised in Los Alamos, and he developed an intimate relationship with the forests around his community during his childhood.

Usner has experienced two devastating wildfires. The first, the Rat Creek Fire (1986), occurred early in his adulthood when he was the caretaker of a nature preserve in the Big Sur area of California. The second wildfire, the Cerro Grande Fire (2000), burned his family's home in Los Alamos. A major topic of Usner's interview discussion, therefore, concerns his academic and personal relationship with catastrophic wildfires within landscapes that he knows intimately. His discussion of the disjunction between his academic understanding of the benefits of fire within a wild and functioning ecosystem and the sense of great personal tragedy and loss when it burned through beloved landscapes is heartfelt and moving.

As a child, Usner recalls the people of Los Alamos were “paranoid” about wildfire. Through his academic training and experiences serving as a fire lookout during the summer while he was in college, he learned that wildfire is a natural and necessary component of functioning ecosystems. He soon formed the opinion that “we should let fire burn whenever possible, as much as possible, because it’s good for the forest, plants, and animals.” While working at Big Sur, however, he became aware of the contrasting academic and personal perceptions of wildfire on the landscape. Although people living along the urban interface with forested lands and actually are fearful about the prospect of wildfire, Usner believes that they generally “are in denial about the overgrowth and potential for a large fire.”

Talking of his own experiences with the Rat Creek and Cerro Grande fires with the benefit of hindsight, Usner admits that even he, despite all of his academic and practical training in fire ecology, “was convinced that it couldn’t happen, the big one” in the days before these conflagrations. He speaks of the personal feeling of devastation that he experienced when long overdue and ecologically necessary wildfires became “his” fires.

Usner believes that people’s perceptions of wildfire are significantly shaped by media portrayals of wildfire. These accounts characteristically focus on the sensational—trees exploding with fire, homes burning to the ground, and people shown in states of raw grief. He notes further that the words and images used by the media to report the news of a wildfire are purposefully selected to fuel emotions of loss and helplessness in the face of nature’s wrath.

Usner speaks about why the VCNP is held by so many people with such regard. Although it has been heavily utilized by people over its history, the beauty of the Valles’ physical landscape invokes a sense of awe. He maintains the great affection that people have for the Valles is not only about their environmental setting, however. During interviews that he has conducted, Usner reports that people remark that the light in the Valles is itself beautiful. “There’s a special quality of it. I think that it elevates it.” That is, the quality of light afforded by this high altitude setting contributes to the Valle’s sense of inspirational awe.

Usner expresses frustration with the management of the VCNP. He finds access much too restrictive given that the Preserve is public land. While he does not advocate uncontrolled access, he would like the policy to be more flexible, such that visitors can be more in control of their own experiences while visiting the Valles. Although Usner is not necessarily in favor of the VCNP issuing back country camping permits, he says,

“I think a person should be able to walk, drive up there, [and] park their car at the trailhead. Carefully conceived so you don’t have cars everywhere. The idea I like the best is to have perimeter access points around the natural basin.”

Usner’s desire to experience the Preserve early in the morning and early in the evening when light conditions are at their very best and wildlife have not yet taken shelter, clearly underscores a major part of his critique. He longs to be able to go out, sit and observe the surroundings for hours, and watch the day go by. His call of greater, albeit controlled, and more flexible public access also rests on his call for the VCNP to give more attention to the wishes and

needs of its constituency. He maintains that the Preserve would better serve its own interests, because there would be so much more “public support, interest, and engagement” if it would allow people greater access.

Usner makes a number of recommendations for operating the Preserve. Foremost, he encourages the VCNP not to closely adhere to a National Park Service management model. (For example, he believes that the Yosemite National Park allows for too much public access.) Instead, he promotes the idea that the VCNP should make the most of its legislative mandate and status as a National Preserve to contract with private businesses to bring people into the Valles as part of local business enterprises, just as the VCNP is already working with local logging and ranching operators to run other commercial interests. This way, the Preserve benefits by having private businesses share in the responsibility for managing visitor access and experience. The VCNP would receive income through resource use leases and service contracts. (Usner, however, notes that for such programs to develop effectively, the VCNP needs to become part of the federal government’s insurance pool.)

Speaking directly to the issue of the tension between environmentalists and cattle operators, Usner offers another recommendation. He notes that local ranchers are good people who have waited a long time to have access the green pastures in the VCNP. He says,

“If you’re going to have a grazing program, why not have it with multiple benefits, generate good will?...There’s a big unnecessary conflict between ranchers and environmentalists...If you had fewer cows out there—from local ranchers, who actually care about the place, have a relationship with the place—I think it would be much more tolerable by the environmental-minded people.”

Ms. Branden Willman-Kozimor

Willman-Kozimor, a relative newcomer to northern New Mexico (having moved to Jemez Springs in 2007), has a passion for the outdoors. With a background in nonprofit organizations and environmental education programs, she quickly became involved with the Environmental Education Center and the Pajarito Plateau Watershed Partnership Project in Los Alamos.

A major portion of her interview focuses on her work teaching a fire ecology curriculum to middle school students (i.e., 6th and 8th grades). A goal of these programs is to help young people understand that wildfire is necessary to the maintenance of a healthy forest ecosystem and to engage them in activities whereby they can benefit their community. Their studies characteristically include an on-site practicum involving the collection and evaluation of environmental data, which managers can then incorporate into their efforts to understand and mitigate the risk of catastrophic wildfire. Exercises in which the children weigh wood samples and then enter these data into spreadsheets to develop estimates of fire fuel loads simultaneously serve as applied applications of their usual classroom mathematics lessons. Such exercises help the students better understand the enormity of the fire fuels management task itself and the urgency of the need for people to take responsibility and to act.

Willman-Kozimor reports further that some teaching techniques, such as the use of quotes by notable people and the students' own artwork, create an emotional link to the otherwise abstract topics that they discuss in the classroom. She has found that basic lessons of forest and fire ecology are most accessible and influential when they are personally engaging rather than based exclusively on recitation.

Willman-Kozimor's formal introduction to the VCNP was through her work. She has since hiked and jogged its trails, fished its streams, and cross-country skied in its snow.

Although she considers neither the Jemez Mountains nor the VCNP to constitute wilderness areas, Willman-Kozimor discusses why this landscape is important to her and her family. The VCNP is special because of its beauty, serenity, and solitude. She feels that places with these qualities are relatively rare.

Willman-Kozimor understands the ranching history in the Valles and the legislative requirement for multiple use. In principal, she has no overwhelming objections to cattle ranching on the Preserve; however, she would like to see more attention be given to the separation of ranching and recreational activities, especially fishing. She expresses concern about the existing grazing management guidelines that tend to focus cattle in the riparian settings because of the heavy trampling of stream banks that she has observed while fly fishing.

While she would like to see greater recreational opportunities, Willman-Kozimor conveys the understanding that the granting of too much recreational access possesses the potential to degrade the very qualities that make the Valles' landscape so special. She recommends planning designs that offer the public different levels of experience, ranging from RV camping to back country hiking and camping. A visitor center is much needed. Willman-Kozimor believes that the Preserve's access management plan should more closely follow the National Park Service model than the Forest Service approach.

Willman-Kozimor would like to see the Preserve expand its role as an education center. The VCNP's importance for education should not be limited to area school children. She talks about the value of an idea of developing a trail through a number of different fire fuels reduction treatment blocks to help the public better understand the beneficial role of fire in pine forest ecology and the results of varying fire management treatments over time. She is an advocate of planning prescribed burns to include a direct educational component, whereby members of the public can view ongoing treatments from a safe location. Willman-Kozimor calls for the addition of a full time Educational Coordinator to the VCNP staff.

Final Project Report Outline

In brief review, interviewees discussed the need for fire in the ecosystem, the importance of prescribed burning, letting wildfires burn if human life and infrastructure were not threatened, and the importance of reducing fire fuels in areas that have undergone years of fire suppression. Several participants also mentioned the negative impact of exaggerated media fire coverage on public understanding of the role and importance of fire in the ecosystem. A role for the VCNP as an important environmental education center was presented along with the thoughts that

controlled multiple use, including some grazing and logging, is compatible with educational and recreational uses. A few interviewees, however, were strongly opposed to any extractive uses of the Preserve. Finally, Los Alamos area participants in particular seek greater access to the Preserve and they express frustration with management policies that they feel are overly restrictive. Nonetheless, they do not favor unrestricted access. They commented that they would like visitors to have more control over their experiences within the Preserve and feel that the VCNP staff should listen to the concerns of their constituency to gain greater support for the Preserve. The body of summarized and selectively transcribed quotes was used to begin developing a comprehensive outline for use in preparing the final project report. The outline, in its preliminary formulation, is presented in Appendix C.

The Expert Interview Excel worksheet is now being revised through the addition of a new data field for encoding each Expert's individual remarks and comments (Appendix D), including their notable quotes, based on its relevance to particular issues identified in the outline. This task, which is now proceeding, will allow for the efficient sorting and review of the rich, and still expanding, body of interview information as particular topics are addressed during preparation of the final report.

As the Phase II and III Expert interviews are completed, the final report outline will be further revised to incorporate relevant new topics of discussion, perspectives, and observations. All new summarized statements and summarized and selectively transcribed quotes will similarly be incorporated into their appropriate Excel worksheet and master Access relational database files in accordance with the scope and structure of the finalized report outline.

Concluding Comments

Each of the Phase I Experts has reviewed this progress report and a copy of the summarized and selectively transcribed information from their interview. Having completed this review process, this progress report is being distributed to land managers, including the VCNP and the U.S. Forest Service. Researchers and members of the public interested in fire management will be able to access this report through these institutions. This process of draft report preparation and review of materials, including the handwritten notes, summarized statements and selectively transcribed notable quotes by the appropriate Experts, will be repeated during Phases II and III of the study. As noted previously, each Expert will be offered opportunities to review the draft of the final project report synthesizing the information compiled during all three phases of the investigation, as well as any related work products.

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APPENDIX A

General Expert Interview Instrument

GENERAL EXPERT INTERVIEW INSTRUMENT

**USE, ACCESS, AND FIRE/FUELS MANAGEMENT ATTITUDES AND PREFERENCES OF
USER GROUPS CONCERNING
THE VALLES CALDERA NATIONAL PRESERVE (VCNP)
AND ADJACENT AREAS**

Forest Service Joint Venture Agreement Number: 07-JV-11221602
Cooperator Agreement Number: KFA 2007-026

USDA Forest Service Rocky Mountain Research Station
333 Broadway SE, Suite 115
Albuquerque, NM 87102-3497
(505) 724-3666
(505) 724-3688

Personal/Family Information

1. Name.
2. Place and Date of Birth.
3. Have you and your family always lived in northern New Mexico?
 - a. If not, what circumstances brought you/your family here?
 - b. When?
4. Please give us background about your academic training.
5. Please give us background about your personal and professional relationship(s) with the Valles Caldera National Preserve (the Valles) and the surrounding mountains.
 - a. Personal.
 - b. Professional.
6. Please talk about your background and interest in fire and fire fuels management.
 - a. On a scale of 1 to 10, how well informed do you consider yourself to be about wildfire and wildfire risks?

1	2	3	4	5	6	7	8	9	10
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- b. Please explain.

Personal Experience with Wildfire

7. What experiences have you had with catastrophic wildfires?
 - a. ____ My house and/or structures on my property were damaged or destroyed.
 1. Please explain.
 - b. ____ There have been fires within 1 mile of my property or where I work.
 1. Please explain.
 - c. ____ There have been fires between 1 and 5 miles of my property or where I work.
 1. Please explain.
 - d. ____ I have been evacuated from my house or place of employment because of the threat of catastrophic fire.
 1. Please explain.
 - e. ____ I have fought wildfires.
 1. Please explain.

Views of Nature, Wilderness, and Resource Management

8. What is wilderness?
9. What are the characteristics of a pristine natural landscape?
10. Are the VCNP and the surrounding Jemez Mountains examples of wilderness and natural landscapes?
11. Why are the Valles and the surrounding areas important to you as an individual? To your family? To your community? To the United States?
12. How do you think that the VCNP should approach the management of the Valles?
13. How do you think that the SFNF should approach the management of the mountains surrounding the Valles?

If a respondent expresses that the VCNP and SFNF have different management goals and responsibilities (i.e., "one shoe does not fit all"), then:

14. How is the VCNP different than the SFNF?
15. Is it important to maintain this difference?

Views of Fire and Fire Fuels Management

The interview will now collect information about each Expert's views of fire in general, as well as their assessment of specific fuels management strategies and tactics in the Valles and in the adjoining SFNF that respondents have either formally researched (through a focused series of readings or attendance in public hearing, workshops, and/or symposia examining the topic) or have learned about informally (through popularized media accounts or passing conversations with others). This discussion will explore general eight topics concerning fire and fuels management.

16. Wildfire is bad.

1. Strongly Disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly Agree
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a. Please explain.

17. Aggressive suppression of wildfire is a good thing.

1. Strongly Disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly Agree
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a. Please explain.

18. Big fires are the result of too much available fuel.

1. Strongly Disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly Agree
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a. Please explain.

19. Fire "destroys" forests and wildlife.

1. Strongly Disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly Agree
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a. Please explain.

20. Fire "sterilizes" the land.

1. Strongly Disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly Agree
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a. Please explain.

21. Livestock grazing can prevent wildfires.

1. Strongly Disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly Agree
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a. Please explain.

22. Logging mimics wildfire.

1. Strongly Disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly Agree
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a. Please explain.

23. Trees, both living and downed, are the focus of wildfire management.

1. Strongly Disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly Agree
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a. Please explain.

24. Prescribed burning is a substitute for wildfire.

1. Strongly Disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly Agree
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a. Please explain.

Perceptions of Wildfire Risk

Building from this background, the interview will now examine each interviewee's assessment of the risk that wildfire poses to the VCNP and the surrounding Jemez Mountains. The discussion is constructed to collect information about the respondents' views of wildfire risk in terms of four dimensions: (1) probability, (2) intensity, (3) spatial extent, and (4) duration of wildfire's probable consequences.

25. How likely do you believe is it that the Valles and the surrounding area will experience wildfire in the future?
 - a. Identify the time frame for your assessment (e.g., within the next 5 years, within the next 10 years).
 - b. Upon what factors do you rely in making your probability statement?
26. How often do you think that wildfires will occur within the Jemez Mountains area during this century?
27. What do you think that such fires will look like?
 - a. Do you expect them to be relatively cool, ground fires, or do you think that they will more likely be hot fires that burn across treetops?
 - b. Upon what factors do you rely in making this assessment?
28. How large do you think such fires likely will grow?
29. Would such wildfires be controllable?
30. What, if any, limits should fire managers incorporate into their planning?

31. What will be the lasting consequences of the wildfires that you foresee happening?
32. Considering the damages that you expect to occur, how long do you think that it will take before the forests are restored?
33. If a wildfire such as you describe should take within the coming decade, how do you anticipate your relationship with the Valles and the surrounding area might change?

Approaches for Appropriate Wildfire and Fuels Management

The preceding topics of discussion provide the context for framing and evaluating specific questions about fire and fuels management within the VCNP and the nearby Jemez Mountains.

34. What are your concerns and preferences with regard to:
 - a. Fire and fuels management in the Valles and in the surrounding portions of the Jemez Mountains?
 - b. Elk and other game management in the Valles and the surrounding area?
 - c. Cattle and cattle management in the Valles and in the surrounding area?
 - d. Logging in the Valles and in the surrounding area?
 - e. Enhancing the habitat for native plants and animals?
 - f. Preservation of a “wilderness experience?”
 - g. Creation and maintenance of recreational opportunities?
 - h. Maintenance and enhancement of opportunities by the region’s traditional and historical communities for established cultural uses, such as plant gathering, pilgrimage and other ritual observances, and fuel wood.
 - i. Water quantity and quality in the Valles and in the surrounding area?
35. How do you view the relationship among fire, game, cattle and other livestock, and logging?
36. To what extent have you and your family relied, and to what extent do you rely now, on native plants, such as pinyon nuts and herbs, from the Valles area?
37. To what extent have you and your family relied, and to what extent do you rely now, on native game (deer, elk, turkey) and fish (especially trout) from the Valles area?
38. What do you recommend for fuels management?
 - a. Do you think that prescribed burning is effective?
 - b. How serious is the risk that a prescribed burn will again escape?
 - c. Do you have health concerns, such as smoke inhalation, about prescribed burning?
 - d. Do you have other concerns about prescribed burning?

39. How effective do you think other fuel treatment options are?
 - a. What are your views on the mechanical thinning of small diameter trees?
 - b. What are your views on logging large and small diameter trees?
 1. Do you think that small-scale locally-owned timber operations that produce specialty products, such as vigas, latillas, and coyote fencing, can contribute to the effort of thinning forests while generating revenues and providing employment opportunities?
 - c. What are your views on herbicide use?
 1. Habitat structure--issues of density and diversity of desired vs. unwanted plant species).
 2. Water quality.
40. How effective do you think combination treatments are?
 - a. Prescribe burns and mechanical thinning.
 - b. Prescribed burns and herbicide use,
 - c. Mechanical thinning and herbicide use.
41. Do you think that community-based initiatives, such as those involving the reduction of fire fuel loads, enhancing habitats for desired plants and animals, and maintaining or improving water quality could be or should be incorporated into the tool box of fire and fuels management options?
42. How do you feel about the option of no active fire management except to protect homes, other buildings, and infrastructure?

Values and Beliefs

This part of the interview instrument provides Experts with an opportunity to express their views of what fire and fuels management practice should include to fulfill their expectations of an appropriate environmental or wilderness ethic.

43. Do you feel that the VCNP and the SFNF share your values for sustaining the area's environment and landscape in their fire and fuels management efforts?
 - a. Please explain.
44. Do you feel that the VCNP and the Forest Service share your goals values for sustaining the area's environment and landscape in their fire and fuels management efforts?
 - a. Please explain.
45. Do you feel that the VCNP and the Forest Service listen to your opinions and include your views in their developing their fire and fuels management efforts?

a. Please explain.

46. Do you trust the efforts by the VCNP and the Forest Service to manage fire and fuels in the Valles and the surrounding areas?

a. Please explain.

Experts' Specific Knowledge and Concerns of Experts

This final part of the interview consists of a free-form dialogue that allows Experts the opportunity to emphasize issues that they consider important.

APPENDIX B

Interview Consent Form

INTERVIEW CONSENT FORM

USE, ACCESS, AND FIRE/FUELS MANAGEMENT ATTITUDES AND PREFERENCES OF USER GROUPS CONCERNING THE VALLES CALDERA NATIONAL PRESERVE (VCNP) AND ADJACENT AREAS

Forest Service Joint Venture Agreement Number: 07-JV-11221602

Cooperator Agreement Number: KFA 2007-026

USDA Forest Service Rocky Mountain Research Station

333 Broadway SE, Suite 115
Albuquerque, NM 87102-3497
(505) 724-3666
(505) 724-3688

As the project's Principal Investigators, Dr. Kurt F. Anschuetz, Consulting Anthropologist/Archeologist, and Dr. Carol B. Raish, USDA Forest Service Rocky Mountain Research Station, have explained in their introductory correspondence and the initial, informal "get-to-know-one another" meeting, they request your permission to document this Expert Interview using a variety of media, including hand written notes, audiotape/digital voice recorder, and photographs.

If you grant your permission to Drs. Anschuetz and Raish to document this interview with any (or all) of the above-mentioned media, they further request your permission to transcribe the discussion word-for-word and to include excerpts of this transcript in the project report(s).

1. I will allow the interviewer(s) record the information I give them in the following ways (check any of the following that apply):

☐ Written notes
☐ Audiotape/digital voice recorder
☐ Photographs
☐ Transcription/translation of the audiotape/digital voice recorder record
☐ Other (specify): _____

2. I will allow the interviewer(s) use my information in their final report(s). Yes: _____ No: _____

3. In addition, I allow the following uses of my information (check any of the following that apply):

☐ Using my name in the final report
☐ Putting some of my statements word-for-word in the report
☐ Putting in a photo of me in the report(s)
☐ Placing the records checked in Item 1 at the Rocky Mountain Research Stations for permanent curation.
I understand that other investigators in the future might view these records without my explicit knowledge.

4. I would like copies of the following:

☐ Records checked in item 1:
☐ Written notes
☐ Audiotape/digital voice recorder documentation
☐ Photographs
☐ Transcription/translation of the original and revised audiotape/digital voice recorder records
☐ Other (specify): _____
☐ Final project report(s)

5. I would like to read/edit:

- ___ All transcriptions of the audiotape/digital voice recorder documentation
- ___ Summaries of my statements in draft final project report(s)
- ___ Direct quotes of me in draft final project report(s)
- ___ Other (specify): _____

Interviewee's Signature: _____ Date: _____

Address:

Telephone:

E-mail:

* * * * *

INTERVIEWER USE OF RECORDS OF THIS INTERVIEW*

We (i.e., Kurt F. Anschuetz and Carol B. Raish) will not use any records of this interview other than those filed with the Forest Service Rocky Mountain Research Station for purposes other than the project identified on this form.

Interviewer's Signature: _____ Date: _____
Kurt F. Anschuetz, Consulting Anthropologist/Archeologist

Address: 6228 Calle Pinon NW
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Telephone: (505) 294-9709
Fax: (505) 294-9709
E-mail: kanschuetz@comcast.net

Interviewer's Signature: _____ Date: _____
Carol B. Raish Research Social Scientist

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Fax: (505) 724-3688
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***PLEASE NOTE:** Any information retained by the USDA Forest Service Rocky Mountain Research Station will be kept confidential to the maximum extent permitted by the Freedom of Information Act. The USDA Forest Service Rocky Mountain Research Station, however, cannot guarantee strict confidentiality of any records placed in its files for permanent curation.

APPENDIX C

Initial Outline for Final Report (Numbers in Parentheses Used in Database Coding)

INITIAL OUTLINE FOR FINAL REPORT

USE, ACCESS, AND FIRE/FUELS MANAGEMENT ATTITUDES AND PREFERENCES OF USER GROUPS CONCERNING THE VALLES CALDERA NATIONAL PRESERVE (VCNP) AND ADJACENT AREAS

I. (10000) Public Perceptions I: Wildfire

- A. (11000) Wildfire as Bad Thing vs. Part of Natural Systems
 - 1. (11100) Loving Our Forests to Death Through Aggressive Suppression
 - 2. (11200) A Constant in the Region's Natural History (11200)
 - 3. (11300) Inevitability of Wildfire in Today's Pine Forests
 - 4. (11400) Canary in the Coal Mine
 - a. (11410) An Ecological System Out of Balance.
 - b. (11420) Climate Change
- B. (12000) "Smokey Bear" and "Bambi" Syndromes
 - 1. (12100) Media and the Conditioning Role of Language and Images of Fire
 - a. (12110) Widespread Devastation of Forest Fires vs. Beneficial Ecosystem Renewal
 - b. (12120) Something to be Fought as Unconditional War
 - c. (12130) Firemen as Today's Heroic Cowboys
- C. (13000) Picking One's Fights; the Value of Fighting Big, Catastrophic Fires
 - 1. (13100) Are Big Fires Controllable?
 - a. (13110) Challenges of Wind Events
 - b. (13120) Challenges of Existing Fire Fuel Loads
 - c. (13130) Challenges of Interacting with a System Out of Balance
 - 2. (13200) Value of Spending Public Funds on Backcountry Wildfires
 - a. (13210) Doing Something or Nothing
- D. (14000) Post-Fire Forest Recovery
 - 1. (14100) Grief for Loss; Hope Through Renewal

II. (20000) Wildfire Management

- A. (21000) Need for Holistic Planning Over the Long Term
- B. (22000) "Let Burn": Doing Nothing in an Ecosystem That Seeks to Reset Itself
 - 1. (22100) When Bigger Might Be Better
 - 2. (22200) Value of Mosaic Burns
- C. (23000) Passive Aggressive Approaches
 - 1. (23100) Herding Fires in the Backcountry
- D. (2400) Conservative-Aggressive Fire Suppression

1. (24100) Urban Interface
 2. (24200) Old Forest Stands
- E. (25000) Who Makes the Call? And on What Basis?
1. (25100) Does One Size Fit All?
 - a. (25110) Latitude to Make Decisions Based on Local Factors?
 1. (21111) Fire History
 2. (21112) Physiography
 3. (211130) Weather at the Time of the Burns
 2. (25200) Need for Interagency Coordination and Cooperation
 3. (25300) Necessity of Local Communities, Local Experience
- F. (26000) When Things Go Terribly Wrong
1. (26100) Learning From Past Mistakes in Preparing for the Future
 - a. (26110) Amnesia or Amnesia?
 1. (26111) Encouraging Fire Managers to Critique What Strategies and Methods Did and Did Not Work to Contribute to Effective Learning
- G. (27000) Post-Fire Forest Restoration
1. 27100) Erosion
 2. (27200) Downside of Aggressive Reseeding
 - a. (27210) Response to Community Pressure to Do Something Proactive
 - b. (27220) Introduction of Invasive Species
 3. (27300) People's Changed Relationship
 4. (27400) Beneficial Aspects to Forest Ecology

III. (30000) Fire Fuels Management

- A. (31000) Prescribed Burning
1. (31100) Challenges Created by Successful, Long-Term Fire Suppression
 - a. (31110) Need for Hot Burns to Kill Larger Saplings
 2. (31200) Can Prescribed Burns Mimic Natural Wildfire?
 - a. (31210) Are Mosaic Burns Possible?
 3. (31300) Need for Continual Maintenance Over the Long-Term
 - a. (31310) Public Relations
 1. (31311) When Not Doing May Be the Right Thing (in the Backcountry)
 - a. (31311.1) Importance of Trust
 - b. (31311.2) Importance of Public Education
 2. (31312) Smoke in the Air, Fire in the Backyard (on the Urban Interface)
 - a. (31312.1) Importance of Trust
 - b. (31312.2) Importance of Public Education
 3. (31313) Health Issues
 - a. (31313.1) Delicate Balance of Managing Smoke Sensitivities and Fire Fuels
 4. (31400) Post-Prescribed Burn Consequences
 5. (31500) Prescribed burning and other fire fuels reduction measures in the Valles

- B. (32000) Thinning, Mastication, and Mulching
 - 1. (32100) Who Makes the Thinning Decisions and on What Basis?
 - 2. (32200) Contract Thinning Operations
 - 3. (32300) Partnership with Local Businesses
 - a. (32310) Small-scale lumber operations
 - 1. (32311) Vigas, latillas, coyote fences, etc. v
 - b. (32320) Fuel wood cutting
 - 4. (32400) Challenges of Accessibility
 - 5. (32500) Risk of Transforming "Wild" Forests into "Plantations"
- C. (32000) Are Herbicides Tools Worthy of Consideration?
- D. (34000) Landowner Responsibilities
 - 1. (34100) Public Expectations
 - 2. (34200) Interagency Coordination
 - 3. (34300) Homeowners' Responsibilities and Liability Issues

IV. (4000) Public Perceptions II: Wilderness

- A. (41000) Wilderness
- B. (42000) Pristine Conditions
- C. (43000) Landscape
 - 1. (43100) Relationship between Center and Edge
- D. (44000) Necessity of Solitude
 - 1. (44100) Sound/Silence
 - 2. (44200) Light
 - 3. (44300) Wildlife
 - 4. (44400) Disruptions/Disturbances
 - a. (44410) Too Narrowly Delimited Hours for Visitation
 - b. (44420) Cattle
 - c. (44430) Utility Lines
 - d. (44440) Motorized Vehicles
 - e. (44450) Problem with Group Events
 - f. (44460) Uninviting Overgrown Forests

V. (50000) Challenge of Finding Common Ground: Multiple Use in the VCNP

- A. (51000) Livestock Ranching
 - 1. (51100) Management Models
 - a. (51000) Rotation of Range and Recreation Areas to Reduce Potential for Conflict among Users
 - 2. (51200) Commercial Enterprise vs. Traditional Practice

- a. (51210) Recommendations for Improvements
 - 1. (51211) Longer Contract Periods
 - 2. (51212) Expand Grazing Tracts
 - 3. (51213) Reduce Impact on Riparian
- B. (52000) Logging
 - 1. (52100) Management Models
 - a. (52110) Sustainable Logging Commercial Enterprise
 - b. (52120) Fuel Wood
- C. (53000) Recreation
 - 1. (53100) Management Models
 - a. (53110) Staged/Scaled Access
 - b. (53120) Ecotourism
 - 1. (53121) Partnerships with Local Entrepreneurs
 - 2. (53122) Assist with Population Control
 - 3. (53123) Information and Education
 - 2. (53200) Challenge of Not Loving the VCNP to Death
 - a. (53210) Over protection
 - b. (5322) Over Use
 - 3. (53300) Interviewees' Views and Recommendations
 - a. (53310) Hiking
 - 1. (53311) Rim Trail
 - b. (53320) Fly Fishing
 - c. (53330) Cross-Country Skiing
 - d. (53340) Mountain Biking
 - e. (53350) Bird Watching
 - f. (53360) Camping
 - g. (53370) Horseback Riding
 - h. (53380) Motorized Vehicles
 - i. (53390) Art
 - j. (533980) Special Events
 - 1. (53399) Ranching Programming as Revenue Generating Recreational Venture
 - 4. (53400) Need for a Visitors Center and Other Infrastructure
- D. (514000) Elk and Other Wildlife
 - 1. (54100) Hunting
 - a. (54110) Elk
 - b. (54120) Turkeys
 - c. (54130) Deer
 - d. (54140) Big Horn Sheep
- E. (55000) Habitat Restoration
- F. (56000) Watershed Protection

G. (57000) Education as the Common Ground

H. (58000) Constituency

I. (59000) Heritage resources

VI. (6000) Recasting VCNP as Education and Science Center

A. (61000) Los Alamos Ranch School Tradition Revitalized and Updated for the 21st Century

B. (62000) Prescribed Burns: Friendlier Side of Fire and Fuels Management

1. (62100) Experimentation with Techniques

a. (62110) Better Understand Fire Behavior Under Different Circumstances

b. (62120) Monitor Alternative Restoration Treatments

2. (62200) Public Education Programs

a. (62210) Forest Ecology

b. (62220) Fire Ecology

c. (62230) Fire and Fuels Management

d. (62240) Restoration/Recovery

1. (62241) Bringing the Wilderness Back into the Preserve

C. (63000) In-field Component of Curricula

1. Environmental Documentation

2. Community Service

D. (64000) Trail Building

1. Philmount Ranch Model to Build Trail System across the Jemez Mountains

VII. (70000) Management Models for the VCNP

A. (71000) Forest Service

B. (72000) Park Service

C. (73000) Wildlife Preserve

VIII. (80000) Other Issues and Topics

A. (81000) Egalitarianism

1. (81100) Recreational Access

2. (81200) Access to Entrepreneurial Enterprises

B. (82000) Advocacy and the Need for Advocates

1. (82100) VCNP as a Poor Neighbor

2. (82200) Perception that Los Alamos's Expertise and Needs Overlooked

C. (83000) Views of the Enabling Legislation

1. (83100) VCNP as a Working Ranch
2. (83200) Board of Trustees
3. (83300) Self-Sufficiency
4. (83400) Relations with Tribes

D. (84000) Other

1. (84100) Need for Access to Government's Liability Insurance Pool
2. (84200) State of New Mexico Game and Fish
3. (84300) Wolves/Predators

IX. (90000) Conclusions

OTHER TOPICS OF INTEREST

1. (99991) Fire Ecology
2. (99992) Fire History
3. (99993) Culture History

APPENDIX D

Expert Interview Notes and Selective Transcriptions